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THE OPENING ADDRESS

BY THE PRESIDENT, MR. J. ALFRED GOTCH, HON. M.A.OXON., F.S.A.

[*Delivered at the General Meeting on Monday, 3 November 1924.*]

UNIFICATION OF ARCHITECTS; SUPPLEMENTAL CHARTER; REGISTRATION OF ARCHITECTS; CHARTERED ARCHITECTS; R.I.B.A. LIBRARY; INTERNATIONAL CONGRESS OF ARCHITECTS; ROYAL COMMISSION OF FINE ART; OXFORD CONFERENCE.

SEVERAL events of great importance to us as an Institute have happened in the world of Architecture since we met at the opening of last Session, and perhaps I may be allowed to refer to them in some detail, even to the exclusion of remarks upon Architecture as an Art. After all, Architecture has to be practised by architects —in the main, at any rate—and matters which affect the well-being of architects must to a certain extent affect Architecture also.

It has become necessary of recent years to readjust our views as to the aims or mission of the Institute. It was founded some ninety years ago to promote the study and practice of Architecture ; it was a Learned Society quite as much as it was an Association of Architects banded together to protect and promote their own interests. But since the days of its youth it has seen the number of practising architects increase tenfold ; circumstances have changed in every direction ; the outlook of the world is different. Almost every conceivable occupation now has its society which endeavours to regulate not only the relations between its own members but also the relations between its members and the public. It would be unwise, and indeed impossible, for any old-established body such as ours to ignore this tendency, and it is necessary to recognise the fact that in the present day it is incumbent upon the Institute to promote the interests of architects as well as those of Architecture. This means a widening of its scope, an increase in the directions to which its energies may be guided : not so much a change of aim as an increase in the objects to be aimed at.

The Institute is, in fact, adapting itself to the changed conditions and has shown that it is so doing by taking its share in the recent negotiations which ended in the amalgamation of the Society of Architects with ourselves. That object, which has been pursued for the last 20 years, but which, for one reason or another, had not hitherto been gained, has now been successfully achieved, owing chiefly to its intrinsic merits and partly to the goodwill displayed by both sides in their prolonged and delicate negotiations. The fusion

will strengthen the Institute, especially in its relations with the public, to whom it can now speak with the voice of a united profession.

I now beg, on behalf of the Institute, to welcome the Society into our ranks, and I rejoice to think that they are with us and will share the high aims which animate us and the great responsibilities which devolve upon us. We must all recognize that to forgo a separate existence is no small sacrifice, and we trust that the sacrifice will be rewarded by the increased strength and wider opportunities which the fusion will confer.

It must not be forgotten that, however much we may have widened our borders, we adhere to the essential principle that a definite standard of efficiency must attach to membership of the Institute. We owe this to the public quite as much as to ourselves; and the public may feel reassured as to our intention of maintaining a standard by the fact that our next step will be the promotion of a Bill for the Registration of Architects after they shall have passed a qualifying examination. Not only on its own merits is such a Bill required, but we are pledged to its promotion by the terms of our fusion with the Society of Architects.

I do not propose to go at length into this question to-night; it has been discussed, demanded and denounced so much and so often as to leave nothing fresh to be said. But this, I think, may be observed—that there is a strong and widespread feeling in its favour, especially among our provincial members. Difficulties there will be, especially those attaching to a private Bill, but these will not deter us from pursuing our object; and a Committee, formed for the purpose, is now engaged upon the work of preparing a Registration Bill.

This successful amalgamation is the most outstanding event of the past year. It increases our membership, and consequently our funds, for which—needless to say—we shall find good use; and it brings a large number of architects within reach of the help and discipline of the Institute.

The amalgamation is not yet legalized; it has entailed a Supplemental Charter and certain changes in our By-laws, and these have to be sanctioned by the Privy Council; but the necessary steps are being taken, the process is well advanced, and as there is no opposition it should be successfully completed within a short time.

It will be within your recollection that already some two years ago we had decided to amend our By-laws, largely in matters of phraseology; the present opportunity has been taken to effect these amendments and to introduce one or two others which are of considerable importance. It has been felt for some time that our method of electing the Council was open to improvement. The need for change was not pressing in the long series of quiet and uneventful years to which some of us look back with secret satisfaction. But when acute controversies arose, it was found that election appeals were highly efficacious in promoting the views of those who resorted to them, with the result that more than once a clean sweep was made of the old Council and an almost entirely fresh body of men were elected to sit on the new. It was generally recognised that such violent changes were undesirable, and only in less degree was it felt that keen electioneering and the attitude of mind engendered by it were not necessarily conducive to the advance of Architecture as an Art. So the Institute has decided to alter the method of electing its Council. Instead of the whole body retiring every year, only one-third will do so, thereby ensuring on the whole a continuity of policy, but at the same time affording opportunity for a gradual yet complete change, should the Council endeavour to pursue a course opposed to the wishes of the general body. This is a reform as wholesome as it is simple.

A second important matter is the relation of our provincial members to the government of the Institute. I use the word "provincial" from long habit and because our headquarters are, and always have been, in London. At its inception the Institute was almost entirely a London affair. It is rather amusing, in the light of present circumstances, to find with what effusion the first members from outside London's cab radius were welcomed. But things have altered. One after another architectural societies in provincial towns, large and small, have become allied with us; so have societies overseas, and at the present time it is no empty boast to say that on our own members and those of our allied societies the sun never sets. The number of members practising beyond the London area outnumber those within it by two to one. It would, therefore, seem possible that in course of time it will be perfectly natural, when necessary to make a distinction, to speak of

our "metropolitan" members instead of our "provincial" members as we do now.

But whether this slight yet significant change should mature or not, it has become very clear that the well-being of the Institute now largely depends upon the goodwill of those members who practise outside London; and it is equally clear that by-laws which hinder the latter from voting on important issues are inimical to the welfare of the body corporate. Accordingly a greater share of representation on the Council has been given to the Allied Societies, and not only to them but, in accordance with the democratic spirit of the age, to the Associates. Nor does the change end there, for representation is now to be given to Licentiates—one step among several which have been taken towards improving the status of that class.

With regard to voting, take one instance only: hitherto a resolution of the general body could only be passed at a meeting held in London. It is not difficult to imagine the trouble and expense entailed upon members living in the wilds of Scotland, Wales or Ireland, if they felt constrained to come up and vote; or in the alternative, their annoyance at sitting impotently at home while, perhaps, vital issues were in the balance in London. This serious drawback has been remedied by the establishment, under certain conditions, of a postal vote.

Another matter which may have far-reaching effects is the permission now given to all members of the Institute to designate themselves "Chartered Architects." This is a step, and a useful step, toward registration, but it is not a substitute for it; for registration will apply to all qualified architects whether members of a Society or not, whereas the designation "Chartered" can only apply to our own members. Nevertheless, in case Parliament, in its wisdom, should decline to grant Registration, the public would be in part protected by the opportunity afforded them of employing a chartered architect.

These, ladies and gentlemen, are the most important of the matters which chiefly affect us, inasmuch as they alter and strengthen our constitution. But there is another matter of some moment which has affected our well-being during the last year, and that is the matter of our own premises. You will recollect that a year ago we held our Inaugural Meeting, and several of those that succeeded it outside these walls. Now, I am glad to say that thanks to the skill of our Honorary Secretary we are able to meet in our own building and in a room in which it is easy to speak even if it is no pleasure to hear. But—and here comes a large reservation—these premises are still far from perfect. Our Library, which I believe to be the finest architectural library in the world, is not entirely safe from the risk of fire; it is inadequately housed, and its continual growth will before long compel us to enlarge its boundaries. The question is far too complicated to be dwelt upon now; but there it is, and it will have to be dealt with. I need hardly add that the Council is fully alive to the great importance of the subject, and that it is already taking steps to find a way out of the difficulty.

Another important event which has occurred in close connection with the Institute is the International Congress on Architectural Education, the first of its kind. Two years of systematic preparatory work were crowned with signal success. A large number of nations in the Old and New Worlds were represented by some of their most distinguished architects and teachers of architecture. The lectures and discussion on the past, present, and future of architectural education were of first-rate importance, and the complete report, which is in process of preparation, will be the hand-book of those concerned with architectural education for years to come. The exhibitions of students' work not only filled our galleries here but Devonshire House and Grosvenor House as well, and gave an unexampled bird's eye view of what is being done by the architects of the immediate future all over the world. On the social side the Congress was at least equally fruitful. Personal intercourse and informal discussions greatly helped to create a mutual understanding and good feeling, and the banquet which ended the Congress with so much enthusiasm was one of the most successful in our history. Our Board of Architectural Education, and the authorities of our architectural schools have now at their disposal a vast body of information and doctrine to which they can devote their liveliest powers of digestion.

We owe a great debt of gratitude to those whose hard work made this Congress a success: to Mr. Curtis Green, the Chairman of the Board, to Mr. Maurice Webb, the Chairman of the Executive Committee of the Congress, and to all others who gave time and trouble in unstinted measure to helping them.

Outside our own body, by far the most interesting event that affects us in the prosecution of our Art is the appointment of the Royal Commission on Fine Art. This act, I am sure, has been welcomed not only by architects, but by all who have an enlightened interest in the arts. But in this, as in all reforms, expectations that are too sanguine will sow the seeds of their own disappointment. You cannot abolish bad design by a stroke of the pen, although you can help to restrain it. By the terms of its appointment the Commission is an advisory body. which can only function when put in motion by an outside power. Such power lies with the Government and with public or quasi-public bodies, who can seek the Commission's advice or opinion on matters connected with the Arts as they affect the public. The Commission cannot enforce its advice or make its opinion prevail ; it has to trust to the good sense of those who seek its help. But the means of drawing its attention to matters of public concern are fairly wide. They include all local authorities, and all influential societies interested in matters relating to Art. If, therefore, some outrage on artistic susceptibilities were contemplated, it would devolve upon the sufferers to bring to their own way of thinking either their own local authority or some reputable society having suitable aims. This should not be difficult if the matter is one of real importance. This step having been successfully taken, the facts of the case, accompanied by explanatory plans, drawings and photographs, ought to be submitted to the Commission, which would consider them in detail, and, if necessary, would visit the site and make its own inspection. The Commission would then proffer its advice, which would necessarily carry great weight, although it need not be accepted under compulsion. The public, therefore, if members of it are sufficiently alert, need no longer stand by in impotence while some outrage on good taste is perpetrated.

Again, the Government can always avail itself of the Commission's advice in any public work or important lay-out. But it must be borne in mind that the Commission has no initiative of its own, it can only deal with what is brought before it ; and supposing it has a number of sow's ears submitted to it, it has no power to turn them into silk purses.

It will, in the nature of things, be largely concerned with architectural matters, but of this you may rest assured, that it will not usurp the functions of the practising architect ; it will not, for instance, take on the assessorship of important architectural competitions, and this, less because such a course would unduly encroach upon the work of architects, than because the Commission would be unfitted to cope with the thousand and one details inherent in the assessing of a competition.

The withholding of compulsory powers from it, at any rate in its early life, is a wise limitation, but it will nevertheless exert a powerful influence in the formation of a sound public taste. Its preliminary steps must be taken with discretion, but it has before it, I am convinced, a fruitful and beneficent future.

One final reference to events of the last year and my survey of the past is done. We have never had a more delightful Conference than that which was held at Oxford in July. The attendance was never so large, the hospitality was never more cordial, the *locale* was never more attractive. To our provincial members, in particular, was the appeal strong. To see Oxford from within, to have the run of those ancient and beautiful homes of learning was to most of the company a new and stirring experience, and behind all this moving of the spirit there was a soothing sense of peace appropriate to the atmosphere of leisured learning.

The reception accorded by the municipal authorities and the University was flattering in the extreme, and no one who was present will ever forget that last and dignified banquet in the great Hall of Christ Church.

It is gratifying to know that the esteem in which representatives of the Institute were held by the authorities at Oxford is shared in an increasing degree by authorities of other kinds, and by citizens at large. Never has our help in important questions relating to architecture and building been more freely sought, and never have the applications for the appointment of arbitrators in building disputes been so numerous. It is recognised that the help afforded by the Institute is both wise and disinterested.

So much for the past ; into the future I will not attempt to penetrate, but this we must all freely recognise—that the great controversy of the last few years having been at length settled, we can now devote our unfettered energies to matters which come home to our business and bosoms, questions connected with our practice, questions of science, questions of literature, and, above all, we can devote them to the untiring pursuit of our noble art.

Vote of Thanks to the President

The Rt. Hon. THE EARL OF CRAWFORD AND BALCARRES : Ladies and gentlemen, it falls to my lot to invite you to record your thanks to the President for the Inaugural Address, to which, I think, we have listened with great interest and deep attention. Though technically an inaugural address, the statement has been, in effect, a review of a year which has been, in many ways, extremely remarkable, memorable, in fact, if only from the achievement of unifying the art, or the profession, as you may choose to call it, of architecture. This long-drawn controversy, I hope, has now reached its close. People like myself, outsiders, have been a little distracted during the last twenty years by the disputations about registration of architects ; and if you architects rejoice at this happy and honourable termination, I can assure you that there is an echo, however dim, in the hearts and in the minds of many of the outer public. It is good for us of the outer public to know that at length unity of outlook and of purpose has been achieved amongst those upon whom, whatever we may say, we are singularly dependent ; and I am sure that I do not go too far in saying that architecture itself will not suffer from finding itself, in the future, less concerned with its domestic and internal organisation. The President has reminded you—some of you he has reminded with almost brutal cruelty—that the Institute is a learned society, and others he has exhorted, with equal directness, to active pursuit of the essential art. Of course, the issue is not yet finally closed ; to crown the achievement of this issue an Act of Parliament, no doubt, will prove necessary ; it cannot all be done by the Privy Council, and Acts of Parliament are very capricious and elusive things. A great deal depends on the fortune of the ballot, and even when the ballot has proved kindly, two or three or four, in some cases one, obstructive person can play hay with the prospects of an Act of Parliament. So I do not think the Institute is justified in counting upon the Registration Act passing into law for several years. The good fortune, of course, might come immediately, but, on the other hand, a Bill which even commands universal sympathy, both on the part of the profession and interests concerned, and at the same time satisfies the public that public interests are not going to be impaired, none the less often takes several years, owing to the hazards of Parliamentary life, to pass into law. But that, after all, is merely the coping-stone of a great edifice. The fact that unity has been achieved is really the material thing, and the ultimate designation, discipline and registration, and so forth, depending on an Act of Parliament, is not really the most important feature of this long-drawn controversy. One thing, I fancy, is axiomatic, namely, that when the Act is successfully passed the public as a whole will tend to become more exacting. I do not think that matters. To some, perhaps, it may be profitable, but that it will occur I think is pretty certain. Meanwhile the Institute will maintain its very high tradition, and perhaps achieve even higher standards of professional outlook and personal efficiency as well.

I should like to refer, for a moment, to another subject spoken of by the President, namely, the new Fine Art Commission. I am extremely glad that he did not take an absurd line of optimism, as so many do ; optimism in these matters is entirely out of place. One has got to put in many years' hard, patient, unremitting work before it is possible to take even an optimistic view of art. And so the President has been not only wise to the public, but charitable to the Fine Art Commission, in warning you against any idea of overrating its power or exaggerating its prospects. The Fine Art Commission is, as he says, a purely advisory or consultative body ; it is entirely bereft of compulsory powers. That was the first act of the existing Government, and I hope it was one of the wisest that they accomplished. It would never do, at the outset, that a body of this kind should be entitled to interfere—or even intervene actively—in cases where a public authority spending the ratepayers' money is engaged upon something which you or others may think distressing. The Commission is based upon the model which has now achieved security in the United States of America. Beginning with the control of the District of Columbia, which is entirely Federal property, this American Commission has gradually extended its scope practically over the whole of the United States, and after a good many years' experimental work has now been invested with compulsory powers in various directions. The success achieved by that body has been very striking indeed. The respect commanded by its verdicts is universal. And though it will take many years before any analogous body in this country can reach an equivalent status, I think that scope for excellent work exists here, and that as this Commission becomes better known more opportunities will be given to it, and I really think that it has, potentially, very great scope for usefulness so long as we maintain a due meed of modesty. On that Commission we have the active co-operation of several architects, and the secretary of the Commission is a very brilliant young architect, an Associate of this Institute.

In several directions I have the honour to co-operate with architects, and I find them an extremely interesting study. I am chairman of a small Committee of the Institute, upon whom is placed the responsibility of choosing a distinguished building in London every

year to be awarded a Premium and Medal as an acknowledgment of success. At first I rather wondered why I was chosen as chairman of that Committee, but as soon as I had my colleagues together I saw that I was the only possible chairman. I found that architects, when meeting together, have very decided views, and are notable for the vivacity with which they express their convictions. Thus we may examine a building, and one architect says, " Really it is impossible we can give a premium or a certificate to that building, the façade of which is composed of Doric, Ionic, Georgian and Corinthian ; it is a perfect outrage," and then he blandly ignores any colleague, be he layman or architect, who differs from him. And the next one will say, " Oh, this may be a very nice building, but it has got no stomach ; I insist upon knowing what is behind these grand walls and colonnades and façades ; I will not deal with a building that has got no stomach, however beautiful." So finally I have to end by saying, " Look here, Mr. MacAlister, don't you think you could get us some tea ? " and we always end in a very amicable fashion, invariably reaching a unanimous and correct conclusion as to the building to which the certificate has to be granted.

This, ladies and gentlemen, has been a very notable and memorable year in the history of British architecture. I think that the success is largely owing to the sagacity, the shrewdness and the foresight of the President, actively helped and supported by a Committee striving hard and strenuously for the welfare of the Institute, for the advantage of its clientele, and for the promotion of its art, and I ask you to pass a most cordial vote of thanks to the President for his address.

The Rt. Hon. LORD CHARNWOOD : Lord Crawford addressed you with authority. He has presided, I believe with conspicuous success over that great Department of State which, jointly with your great profession, is responsible for various buildings which, if they serve no other purpose, at any rate keep alive in the breast of the Londoner a sense of what distinguishes the architecture of the present from the architecture of the past.

I have only one qualification for speaking on this occasion. The entirely modest abode, just not inside a little town, which I inhabit in the country, and which I like to think of as my country seat, happens to be, in the main, a rather creditable building of the eighteenth century, and also to be, in part, the work of Mr. Gotch. And, contemplating, as I now have for some years, with some attention the results of that minor example of Mr. Gotch's work, there is borne in upon my mind that it possesses in high degree one quality which I am led to believe is a singular quality among works of architecture. Taken as a whole, taken in any particular respect, it is precisely and identically that thing which Mr. Gotch's clients happened to require when they called him in. It is almost as if, descending from the lofty plane in which, I believe, the minds of great architects usually move, he had, in erecting that building, given his whole mind to advancing the convenience and amenity and the comfort of domestic life on the part of the humble persons who happened to employ him. I will pursue that theme no further, for I am wholly ignorant of the principles of architecture, or of any other art, and I am apprehensive lest what I have mentioned about Mr. Gotch's work, sincerely supposing in my ignorance that it might be a merit, should, in your more instructed professional judgment, even appear a sin.

I now pass for a moment to the subject of the address to which we have listened this evening. There, in a way, I am more at a loss than before, for if ignorant in reality of architecture, I am, even consciously to myself, ignorant of the internal politics of this great Institute, to which, rightly, I conceive, your President has consecrated his address to-night. And yet I may venture to say that he appears to me to have spoken in a statesmanlike fashion on practical questions which concern the institution over which he presides. There was no appearance to me, in that lucid and, as I venture to judge, wise address, of his yielding to a temptation which often besets the orator, and may sometimes, for all I know, occasionally beset the architect, of introducing beautiful passages under the supposition that the mere forsaking of practical utility in itself achieves the purposes of ornament or beauty. Nevertheless, while the practical character of his address was, one might say, almost austere, I could not fail in remarking, as I am sure you did, that the very zest and earnestness with which your President applied himself to the treatment of these eminently practical subjects resulted, of itself, in a restrained but irrepressible overflow, in every paragraph, almost in every sentence of his address, of certain spontaneous graces and humours which rendered his address pleasant and delightful to listen to. I am not here to instruct you ; I will not attempt to draw any parallel, though I conceive such might exist, between architectural principles and the principles of sound speaking, which latter at any rate I am quite sure your President's address illustrated in a high degree.

It happens to be a very great pleasure to have been called upon to second this vote of thanks to-night. I have known your President for many years. In addition —and without any detriment—to his intense application to the practice of his noble profession, in addition to that loving and delightful study the published fruits of which I hope you all know, of the architecture which illustrates the history of our national life, he has also been, all his days, an active participant in the life and the affairs of the English citizen, a man doing laborious

work, doing sometimes, I venture to say, brave work, in all the local affairs of the life of a great English county. Mr. Gotch is a distinguished English architect not less but all the more because he is an active and a strenuous English citizen, a participant in the life of the neighbourhood in which he lives. It is present to my mind—it is no doubt present to yours, though I will only most barely allude to it—that his accession to the highly honourable office which he now holds was promptly followed by a grave event which has rendered him during the discharge of his duties of office the subject of your most sincere, may I add, your affectionate sympathy.

It is with the very keenest pleasure that I venture, now, to second the proposition of a very hearty vote of thanks to your President, Mr. Gotch.

The motion was put by Mr. Keen, and carried by acclamation.

The PRESIDENT: I am sure you will not expect me to say much in reply to the very kind, the very flattering, and may I perhaps, without offence, say even exaggerated remarks which have fallen from the proposer and the seconder of this resolution. I thank you for the very kind manner in which you have received this resolution.

Presentation of the R.I.B.A. Street Architecture Medal for 1923 to Mr. Francis T. Verity [*F.*]

The PRESIDENT: I now have the great pleasure of presenting the Royal Institute Medal and Diploma for the best London street frontage in the year 1923 to Mr. Francis Verity. I am sure, Mr. Verity, that all will admire the simplicity, the soberness and the dignity of the building which has brought you this medal; and particularly is it noticeable in connection with the purpose for which the building was intended. I take it that architects sometimes, in buildings of that kind, are carried away by the zeal in their clients to do that which, perhaps, in their calmer moments, I will not say they would avoid, but would possibly have altered. So it is singularly interesting to us to find you have contrived so sober and so admirable a building for the purpose for which it was intended.

Mr. FRANCIS T. VERITY: The bestowal of the honour which I have received at your hands gives me fresh heart and energy, because I regard it, as the President was kind enough to say, as an appreciation of an honest endeavour to achieve something, and a sympathetic understanding of the difficulties which had to be overcome in the erection of the Shepherd's Bush Pavilion Cinematograph* Theatre, and that gives the award a special significance to me. For, gentlemen, I had difficulties by reason of the locality in which the building is placed. As it was not in the heart of the West End, special fineness of the exterior was not my clients' aim, the practicability and absolute fitness for the purpose for which they were erecting it, coupled with a minimum of expenditure, being their main idea. Faced by this definite economic problem, probably the greatest problem of many of us to-day, there grew a vision of the splendid simplicity and beauty of brick work, as seen in the old Roman work. Italian brickwork has always had a fascination for me since my student days, and the Roman thermæ were a continual inspiration to me in the designing of this building. I was therefore fortunate in that one of my clients was a lady whose influence enabled me to use the specially made bricks in my façade as you now see it. I will not go into technical details, but the economy view-point is, perhaps, enlightening to our younger men, showing how the presence of difficulties can become, by thought and hard work, the very road to an acknowledged success, such as has to-day been accorded me. Mr. President, to be adjudged worthy by you to follow Mr. Curtis Green in the award of this particular medal, given last year to him for his fine Wolseley Building, is an honour of which I am justly proud, and, Sir, I thank you.

Mr. Verity was born in London, and is the son of the late Thomas Verity, F.R.I.B.A. He was educated privately at Richmond and Boulogne. He was articled to his father and was also a pupil of the late R. Phené Spiers; he studied at the Royal College of Art, South Kensington, University College, the Architectural Association, the Royal Academy Schools and in Paris. He was Tite Prizeman R.I.B.A. in 1889. Mr. Verity was surveyor of theatres to the Lord Chamberlain from 1891 to 1900, and has been architect to the Lord Chamberlain's department since 1901. He was elected Associate R.I.B.A. in 1889 and a Fellow in 1896.

Mr. Verity's principal works are:—New façade of Polytechnic, Regent Street, W.; Junior Naval and Military Club, Piccadilly, W.; Beefsteak Club; grand stand, etc., for the Marylebone Cricket Club; the Civil Service Co-operative Society's buildings, Haymarket; Annexe to French Hospital; large business premises, in St. George's House, 193–197, Regent Street, Oxford Street, Park Lane, North Audley Street, and Green Street, etc.; Flats de Luxe, Hyde Park Place, Berkeley Square, Cleveland Row, Portland Place, Marble Arch, 40 Park Lane, and various private residences; the Imperial Theatre, the Scala Theatre, the Empire Theatre, the Bath and Windsor Theatres Royal, Electric Pavilion, Marble Arch; Shepherd's Bush Pavilion. Now erecting:—the Plaza Theatre, Piccadilly Circus; the Carlton Theatre, Haymarket.

* See illustration overleaf.

"The Pavilion," Shepherd's Bush. *Architect: Francis T. Verity, F.R.I.B.A.*

Stone Decay and the Preservation of Buildings

BY A. P. LAURIE, M.A., D.Sc., PROFESSOR OF CHEMISTRY TO THE ROYAL ACADEMY.

THE decay of stone is due to many causes, expansion and contraction from changes of temperature, wind erosion, the freezing of water within the pores of the stone, the slow solution of limestone and calcite when present as the binding material of sandstone, in the carbon dioxide dissolved in rain water, and possibly in some cases bacterial attack as suggested by Professor Marsh and, finally, not only in our modern cities, but in regions far removed, the attack on limestone and calcite of the oxidation products of sulphur dioxide due to the burning of coal.

A very remarkable example of wind erosion is to be seen in the cloisters of Durham Cathedral. The stone which has been used to build them weathers into holes and pockets. In these the dust of the stone accumulates, and whirling round in the wind vortices drills the stone still deeper, and supplies quantities of sand for the further erosion of the stone, and even of the flags with which the cloister is paved.

There are many causes at work, but the most serious which the modern architect has to face is the attack due to sulphur dioxide from the burning of coal.

This gas passes into the air, and attacks the limestone in two ways. The gas passing into the pores of the stone, in the presence of air and moisture, attacks the limestone and converts the carbonate of lime into sulphate of lime.

Sulphate of lime is soluble in water to the extent of 2 parts in 1,000 parts of water, and therefore will be dissolved by the rain and washed away.

That sulphur oxidation products in the air attack the stone is proved by the amount found in the limestone in the inside of buildings.

The following analysis of the limestone of Lincoln Cathedral taken at different depths shows the large quantities of sulphate of lime which have been formed since coal became an important fuel, inside the cathedral.

ANALYSIS OF BORE INTO THE STONE INSIDE LINCOLN CATHEDRAL.

Sulphate of lime.

0–$\frac{1}{4}$″	$\frac{1}{4}$″–$\frac{1}{2}$″	$\frac{1}{2}$″–$\frac{3}{4}$″	$\frac{3}{4}$″–1″
4·32%	4·08%	3·72%	2·44%

Sulphur dioxide gas is readily soluble in water and is converted into various sulphur compounds, such as sulphurous acid, sulphuric acid and sulphate of ammonia, all of which convert limestone and calcite into sulphate of lime, which again when formed is soluble in the rain water.

The sulphur acids then produced by the burning of the sulphur coal are slowly dissolving our limestone buildings and destroying all sandstone buildings in which the binding material of the quartz grains is calcite.

We might put up with this if that was all we had to fear.

The examination of the Ketton stone forming the low wall outside Westminster Hall will show how slow that solution is. The sloping surface is exposed to the wind and rain of London without protection and yet how well it has stood up to several centuries of attack.

Far more dangerous than this slow solution of the stone is the formation within the stone of crystals of sulphate of lime which as they grow shatter the stone to pieces.

I have seen innumerable examples of this, where a stone is scaling off or coming away in flakes. On examining the new raw surface in a very large number of cases little white patches will be noticed, which, on microscopic examination, prove to be sulphate of lime. The injurious effect of the formation of these crystals is partly due to the fact that their bulk is larger than the corresponding equivalent of carbonate of lime, but this is not the whole story.

The complex laws of capillary attraction and crystal growth tend to the accumulation and growth of these crystals in comparatively open spaces and lines of cleavage within the stone until by their growth they force the stone asunder.

The accompanying illustration shows the crystals of calcite found along a surface of weakness in one of our ancient buildings, finally shoving off a piece of stone 10 in. by 5 in., and varying in thickness from $2\frac{1}{2}$ in. to $\frac{1}{2}$ in.

While there is much that is still obscure in the conditions under which this concentration and production of crystal growth takes place we know enough of the laws governing it to explain a great deal of the apparently capricious behaviour of these crystal growths by which the stone is broken up.

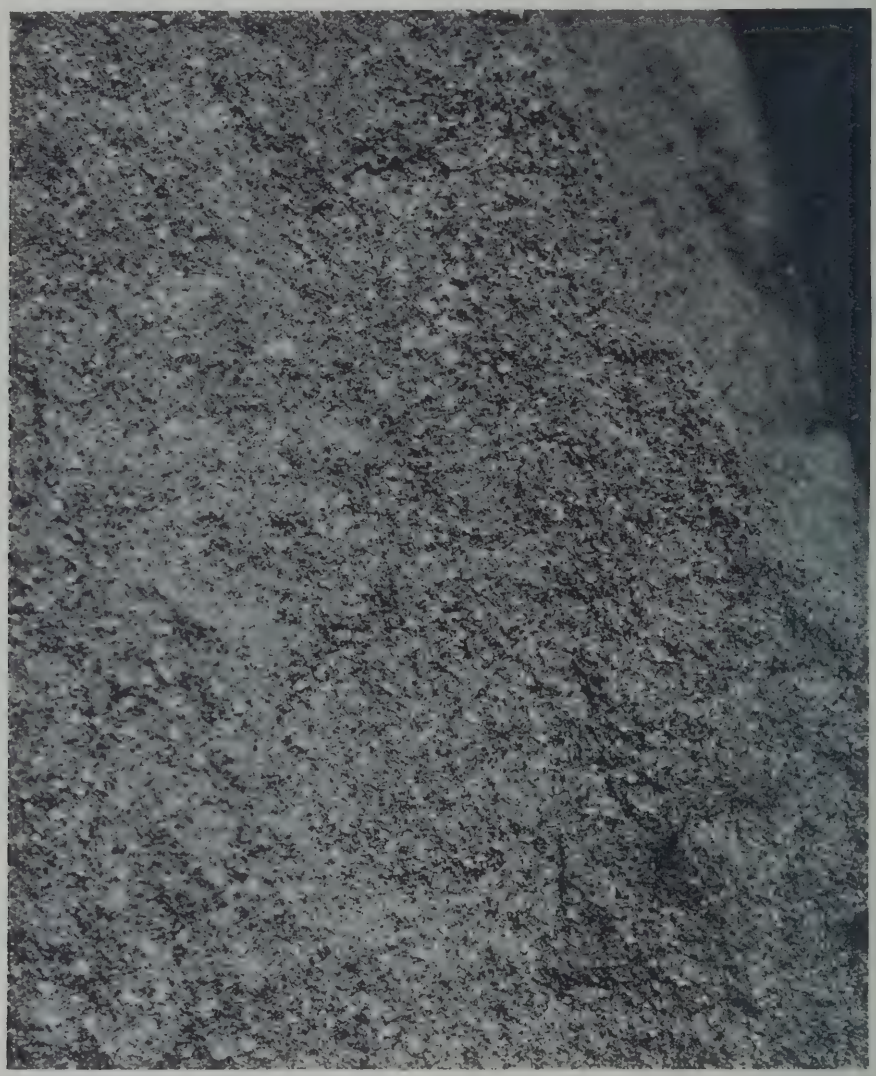
I have before me as I write a piece of sandstone which I have been for months saturating with sulphate of lime. I have now succeeded in slicing off from a block 2 inches each way a slice about a third of an inch in thickness and on examining the new surface under the microscope the little bunches of crystals can be seen growing out from the quartz grains like bunches of grass on a rock. These microscopic bunches of crystals all pushing together have neatly sliced off a piece of stone right across the 2-inch block.

Much depends on the nature of the stone attacked. Whenever the porous surface of a stone is wetted

with water soluble salts within such as sulphate of lime are dissolved and then as the stone dries the water lying in the pores is sucked up to the surface, bringing with it some of the sulphate of lime in solution. Stones like Portland, which rapidly absorb and rapidly evaporate, tend to have the sulphate of lime removed in this way, and this at any rate is one of the reasons why they stand up comparatively well to the London air and rain. The rain has both a preservative as well as an injurious action. The acid it contains attacks the stone, but it is able to dissolve far more calcium sulphate than the acid it contains.

Some limestones suffer more from the crystallisation within the stone of sulphate of lime, and decay is more rapid because the stone does not get washed by quick absorption and evaporation.

Under cornices the rain, working through the stone and running over the edge, carries sulphate of lime in solution which is mixed with soot to form thick black deposits. Ultimately, when these get so thick as to prevent free evaporation, the rain working through the stone brings sulphate of lime, which crystallises in the stone below the soot, and breaks it up. A certain amount of soot deposit seems to do little harm, but



Photograph showing sulphate of lime crystals on the inside face of a fragment of stone which recently became detached from an old building

when it gets beyond a certain thickness the stone rots underneath it.

Cornices should therefore be flashed with lead with the edge brought out to throw off the drip.

As has been explained above, it is not only a question of the amount of sulphate of lime present but its capricious distribution, which may result in disintegration. Inside a building the attack of the sulphur gas is fairly even, and the distribution of the sulphate of lime is even within the stone. The internal stone of Lincoln is perfectly sound in spite of the presence of over 4·4 per cent. of sulphate of lime in the superficial layer.

It is a remarkable fact that there is more sulphate of lime inside than outside Lincoln Cathedral, as shown by the following analysis :

LINCOLN CATHEDRAL OUTSIDE.

Sulphate of Lime.

0–¼″	¼″–½″	½″–¾″	¾″–1″
2·60	2·04	1·57	1·57

LINCOLN CATHEDRAL INSIDE.

0–¼″	¼″–½″	½″–¾″	¾″–1″
4·32	4·08	3·72	2·44

This I attribute to two causes :—

Lincoln was long lighted by coal gas, and coal gas contains a certain amount of sulphur, and contained much more in the past and, in addition, was heated by stoves which often filled the cathedral with sulphur fumes.

The other is that the rain washing the stone of which the cathedral is built, keeps the percentage of sulphate of lime down. Fortunately electric light is now replacing gas in our cathedrals and churches.

I am satisfied, after many years of observation, that the main cause of the decay of stone under modern conditions is the crystallisation within the stone of sulphate of lime. The accumulation of the sulphate of lime is slow, I put it at about the rate of 2 milligrammes per square centimetre a year, and much of it must be washed out from the stone surfaces by the rain, and I attribute the comparative durability of certain stones in the London atmosphere to their structure resulting in rapid evaporation after rain and bringing up the sulphate of lime to the surface.

I wish, therefore, to suggest to architects that we should assist the removal of the sulphate of lime by washing the fronts of buildings down two or three times a year, and I am the more convinced in this suggestion by the excellent preservation of the Goldsmiths' Hall which has been washed down with fire-hose two or three times a year for at any rate the last thirty years.

When I first mentioned my reasons for believing that buildings should be regularly washed to Mr. Wilson of the Office of Works, he directed my attention to the entrance to the Law Courts, and to the Goldsmiths' Hall.

It will be easy now this new proposal is under discussion, to collect examples both for and against. I do not wish to dogmatise on so difficult a question, but wish to direct the attention of architects to this new suggestion : It is evident that stone can carry a certain amount of sulphate lime with impunity. We must aim at prohibiting its accumulation beyond the danger point. According to my view the hotter and dryer the weather the more effective the washing, as we must aim at rapid evaporation to bring the sulphate of lime to the surface. The laws of surface tension in very fine capillary tubes may defeat our purpose in very fine grained stone, but the method is at any rate worth a trial.

The conditions inside and outside a building are really so different that quite a different policy requires to be pursued.

Outside a building the best plan is to help, not hinder, the natural washing of the building. The rain does not get everywhere, and owing to the acid it contains does mischief where there is no free evaporation.

Washing with water, especially under cornices and in places not easily reached by the rain should be resorted to. The washing is best done in the summer, the stone being saturated, then allowed to dry out and then washed again.

A modern building is quite capable of standing being played upon by the fire hose.

Where a stone is soft or partially decayed, it is necessary to replace the absent binding material. It is also necessary to do this in the case of limestones in which the matrix is easily attacked with crumbling of the stone. For this purpose I prefer silicon ester, which deposits round the particles a silica cement, as it gives the maximum of bind for the minimum of closing of the pores of the stone. Hanging scales must be lightly brushed off with a soft brush and the dust blown away with a bellows before treatment and in hot weather the surface should be covered with old sacks to prevent the solution drying out to the surface. The treatment must not be overdone so as to form a white surface of silica on the outside.

In the case of any precious old carvings and mouldings cracks should be filled in with some of the same stone reduced to powder and mixed with a strong solution of ester.

The silica should be given a year to thoroughly harden, and washing of such a building with the fire

hose is too drastic. The water should be sprayed on.

Inside a building the use of washing must not be resorted to as there is a danger that the sulphate of lime which is evenly distributed through the stone might be encouraged to dissolve and recrystallise in special places. The accumulation of sulphate of lime is very slow and was probably much hastened by the use of gas and stoves for heating. The introduction of electric light and of scientific methods of heating will be found a great protection against further decay. Many surfaces after lightly brushing and blowing with a bellows should be treated with a thin solution of silicon ester. This solution has a distinct protective value as well as binding the stone particles together, diminishing the rate of attack of acid vapour, and should therefore prove sufficient under modern heating and lighting conditions.

The best stones to select for building in our modern cities are sandstones in which the binding material is silica. If a limestone is to be used it should first be tested to find how rapidly it is attacked by acid fumes. Limestones differ widely in this, the attack being in some stones much more rapid than in other stones. If an easily attacked limestone has to be used it can be improved by treatment with silicon ester. It should next be tested to find how quickly it absorbs and loses water, and whether it dries out completely or holds a residue of water for some time. A sandstone in which the binding material is calcite will decompose very rapidly, as the solution of the calcite causes the whole stone to crumble. I am not satisfied that limestones which have at present a bad reputation with architects might not be found to behave better if treated with silicon ester and then washed regularly from the time of erection.

Even sandstones with a silica cement are not reliable if the pointing is allowed to decay. The rain entering into the loose mortar will dissolve it and the lime will pass into the stone to meet and combine with the sulphur acids and soon cause disintegration.

GOLDSMITHS' HALL. *Architect: Philip Hardwick, R.A.*

The Works of Sir John Soane, 1753-1837*

BY RONALD P. JONES, M.A. [*F.*].

This book might serve as a model " monograph " on the life and work of a modern architect. The author provides us with a complete survey of Soane's history, documented and dated at every point, lavishly illustrated, and concluding with appendices giving detailed lists of his executed works, his designs and compositions, abstract or unexecuted, his clients, and the pupils who passed through his office, with notes of their subsequent careers.

It is also a model of cheapness, startling enough in these days when far more than its price is asked for comparatively sketchy and fragmentary books on architecture and architects: but we infer from the Preface that the Trustees of the Soane Museum have made this financially possible, in their desire that it should be " brought within the means of all students," who should certainly respond by acquiring and studying it.

The author begins with a short chapter on Soane's career as a whole, which extended from 1768, when he entered George Dance's office as a pupil at the age of 15, till 1833, when he resigned the post of architect to the Bank, and survived for another four years, recognised and honoured at home and abroad as the leader of the profession in England. According to the standards of the day, he had an ideal training through the travelling scholarship in Italy secured by the winning of the Royal Academy gold medal, though this chapter in his life was unwisely cut short, and his private practice was built up with much trial and diffi-

BANK OF ENGLAND: VESTIBULE, PRINCES STREET, ERECTED 1804
From the Drawing in the Breakfast-Parlour of the Sir John Soane Museum

* *The Works of Sir John Soane*, 1753-1837. Edited by Arthur G. Bolton. [London: Sir John Soane Museum.] Price 6s. 6d.

culty. In ten years' time, however, his position was such that he was selected in spite of severe competition, and with the support of William Pitt, as architect to the Bank of England, a post which he held for forty-five years during which the original building gradually expanded to the form in which we now know it, and which it retained for nearly a century until the demand for enlargement and rebuilding has at last become too urgent to be ignored.

trated until the production of the photographs specially taken for this book.

Considered as a whole, the plan of the Bank reveals its history as a piecemeal expansion from a small nucleus of building, for which it was not possible to design a complete axial scheme because the ultimate limits of the site were not foreseen in the earlier years. It has several local sections, so to speak, each planned on axial lines and with some symmetry in themselves ;

The Tivoli Corner *Photo by A. Leeman*

BANK OF ENGLAND : NORTH-WEST ANGLE TO LOTHBURY AND PRINCES STREET (1804–6)

In spite of his length of practice and distinguished position, Soane is for us a " one-building man." Apart from the Bank, he might have faded into obscurity (for without it, his Museum would probably never have existed) and out of a considerable list of executed work very little else has survived to this day. Even the Bank itself, except for its familiar exterior, is little known to the world in general owing to its semi-private character, so that Soane's most interesting and original work is seldom seen and has hardly been illus-

but the sections meet in a haphazard way and there is no comprehensive idea covering the whole range of buildings. Mr. Bolton points out that the very nature of the business of the Bank prevents any " internal climax of effect " such as can be obtained in a public building like a Museum or Law Courts where there is a large amount of open circulation ; and it must be admitted that Soane shows great ingenuity in providing for all the different departments of the business which had to be fitted together on the site.

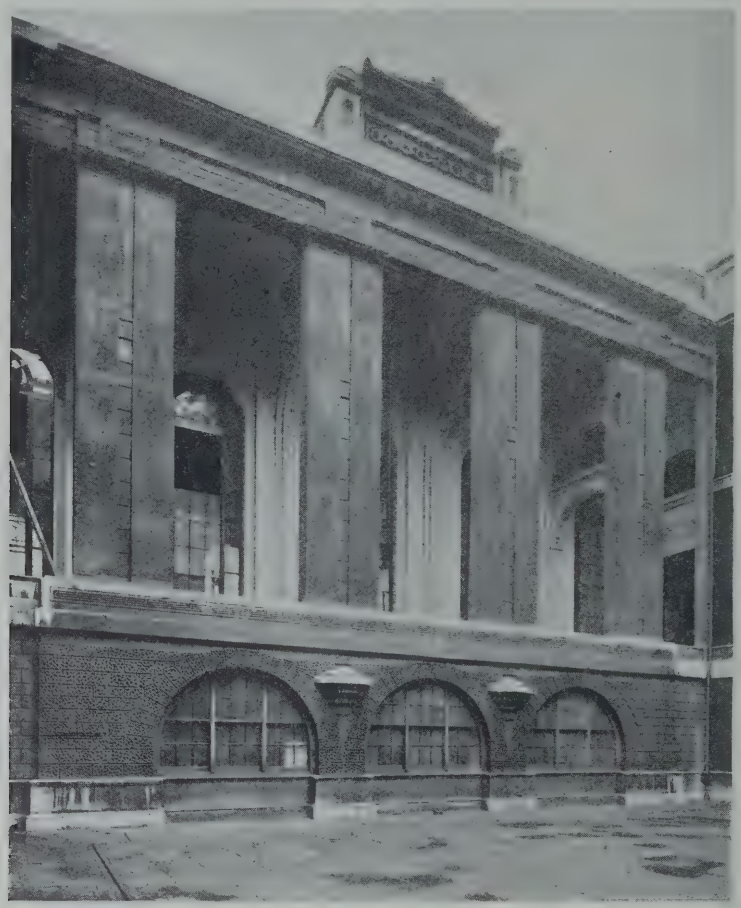
BANK OF ENGLAND: INTERIOR OF THE REDUCED ANNUITIES
As built, with counters in original position. R.A. Lecture Diagram

The problem of the exterior was reduced to the treatment of perfectly blank screen walls, which had to be kept very low in proportion to their length and which gave no indication of the plan and arrangement of the building which they masked, except for a few entrances; and it is unfortunate that, even so, the Tivoli Corner, which obviously looks like one of the main entrances, is in fact nothing but a fine piece of architectural scenery, emphasising an angle which is important in elevation, but negligible in the internal planning.

Considered as a blank wall treatment, the design is interesting and legitimate, if the theorist admits the contention that the constructional elements of one age become decorative elements in a later age, and that the form of a window opening may be used where there is no actual window. It suffers from being rather too low on the ground, and from being dwarfed by the greater height of the surrounding buildings; and in detail the effect is injured by the very lumpy and ungraceful capital of the column, which Soane copied from the temple at Tivoli, one of the worst designed capitals which the Romans ever produced.

The main interest of the interior lies in the vaulting of the larger banking halls, which was carried out in brickwork and hollow cones, the schemes being based on Roman concrete vault designs, but stripped of all the conventional details of orders and mouldings, and reduced to the utmost possible slenderness of section. They show a great deal of originality and variety, and are decorated with a system of incised rectangular lines specially characteristic of Soane.

The contemplation of these vaults, together with the extremely fine abstract design of the open loggia to the Governor's Court, leads us to the conclusion that Soane was born more than a century before his time:



Photograph 1923

BANK OF ENGLAND: LOGGIA IN THE GOVERNOR'S COURT

for what are they but designs for reinforced concrete construction ? Not only his ideas of structure, but his favourite linear Greek form of decoration, were exactly suited to modern concrete, and he would have revelled in designing pavilions for Wembley with flat pilaster strips and Greek key patterns and those solid acroteria and other terminal objects which he evolved to give interest to his skylines. Moreover many of his drawings suggest a continuous non-jointed material like concrete, rather than an articulated construction of stone or brick, and just as some modern architects manage to make their stonework look like terra-cotta, so he seems to have made his look like stucco.

As to his other buildings, or designs, we can hardly regret the disappearance of some, like the Law Courts tacked on to Westminster Hall, and the non-appearance of others, like the design for the House of Lords, for he was evidently unequal to the Grand Manner, and he is perhaps fortunate in being judged mainly by his best work.

After reading Mr. Bolton's comments, in the course of the book, on Soane's merits and defects, and on a general survey of his work, where do we place him in the historic gallery of eminent architects ? His designs are always scholarly and logical, and they show good taste and much originality. Their defects may be summed up in the word " aridity," which the author uses more than once. They seem dry, hard, and chilly —in contrast to his literary powers, since his Royal Academy lectures are described as " involved and full of grandiose platitudes " ; and they lack even a spark of that divine fire of inspiration which gives vitality to work which in other ways may be far less meritorious. His originality itself is dull, compared, for instance, with the sparkling originality of Cockerell. When we come upon the Bank, it fails to give us that slight thrill of pleasure which we get from the " Taylorian " at Oxford, or the " Fitzwilliam " at Cambridge (the latter by one of Soane's own pupils), not to speak of the full and authentic thrill produced by a really great building like St. George's Hall.

We may, in fact, class Soane among the permanent Minor Masters whose work will always possess merit and interest. In the Honours School of Architectural greatness, he is out of the running for a First, but secure of a solid and comfortable Second.

Mr. H. D. Searles-Wood on the Aim of Technical Education

BY I. M. CHAMBERS [*A.*].

In a paper read at the recent educational conference at Wembley, Mr. Searles-Wood deals with the aim of technical education, which he affirms to be not only a development of the powers of the student, but also an improvement of industrial and living conditions, so that such education becomes actually a means of raising the whole community to a higher level of intelligence, ability and goodwill. He, further, claims for it that it is a basis of imperial intercommunication. In Great Britain, technical education has, he states, made great strides during the last twenty-five years, and, notably in architecture, apprenticeship has been largely superseded by training in recognised schools, such as the Architectural Association, the University of London, the Robert Gordon Technical College, Aberdeen, the Glasgow School of Architecture, the University of Liverpool, the University of Manchester and others. Such training is supplemented by the award of travelling studentships by the Royal Institute of British Architects, the Royal Academy Schools and the British School at Rome. The Architectural Association was started in 1847 for mutual study and instruction, and has developed from an evening atelier into a regular school, which is the leading institution of its kind. The schools have hardly yet had time to make an impression on current architecture, but undoubtedly the improvement in design that is to be observed is partly due to their work. A large number of colonial students attend for the purpose of taking the Royal Institute examinations, and the Institute has allied societies in Australia, Burmah, Canada, British Columbia and Africa, where examinations are held under the same regulations.

In a report of 1919, issued by the Ministry of Reconstruction, there are many valuable suggestions regarding the development of technical education, and the assertion is made that " the study of pure science, which is the arena in which even technical problems and difficulties have ultimately to be overcome, is consequently one of the most practical studies." Mr. Searles-Wood points out that the modern technical institute is a natural development from the Mechanics' Institute of the early nineteenth century, of which the Birkbeck Institute of 1824 is typical. Apprenticeship schemes in the building trades are dealt with in a London County Council report of 1914, since when there has been little change. The cause of technical education has been materially assisted both in Great Britain and in the Dominions by the Sanitary Institute, which arranges courses and holds examinations with a view to qualification for public health certificates. Technical education covers altogether a wide field. At the City and Guilds of London Institute, subjects included are engineering, motor engineering, mining, the building trades, textiles, road and rail carriage building, shipbuilding, the

leather industry, etc. Examinations are conducted in eighty different subjects, and the student who has qualified goes to his trade or craft with an ability to analyse the problems met with and to solve them scientifically. Mr. Searles-Wood declares that it is impossible to overestimate the importance of technical education in this country and in the Colonies if the Empire is to maintain its position in the affairs of the world. Before the war the work done was undoubtedly as good in this country as in any other, but, for financial reasons, Britain was unable to reap the full advantages of the discoveries and developments of its scientific and technical experts. It would appear that where this country was behind others was in the magnitude rather than in the quality of its technical education.

The Dominions have, he says, recognised the urgent need of developing industry, and have set up advisory boards with technical and scientific committees, in order to bring industrial development into close contact with research. There is need for a closer connection between schools throughout the Empire, and this might be effected by the establishment of a scheme of travelling scholarships and by some form of Imperial association. Such scholarships should be awarded not only to students, but to teachers, who would benefit by a mutual interchange of ideas, and by a knowledge of the industrial customs and resources of different localities. A scholarship of this type is that given in architecture by Mr. Alfred Bossom. The scheme must be Imperial and should therefore be State controlled, with a proper selection of both scholars and schools. As further evidence of the importance of interchange of ideas, Mr. Searles-Wood gives in outline the scheme of Fellowships in applied science and technology established by the London County Council, and points out that such Fellowships, held in the Dominions, the United States and elsewhere, would tend to strengthen the links between Britain and these countries. A further means to this end would be the establishment of some associations, throughout the Empire, on the lines of the Association of Technical Institutions in this country, and, as a first step to it, a liaison officer might be appointed from the staff of one of the larger of the technical institutions in Great Britain and in each of the Colonies.

The position in Canada is set forth in a valuable report of 1913, which recommends the formation of a Dominion Development Commission, and the provision of a Dominion Development Fund, for the furtherance of technical education. Apprenticeship in Canada is disappearing, and new means and new opportunities are required to provide, for apprentices and workmen, the instruction and training necessary in their craft. From colonial year books, Mr. Searles-Wood extracts notes and statistics relating to education in Australia, New Zealand and South Africa, and, in conclusion, points out that a combined effort in the cause of technical education would make for a better development of the resources of the Empire. Such effort need not destroy individuality in production and method, East remaining east, and West west. The Empire and the technical schools alike depend largely upon imports and exports for their prosperity. The Empire deals with raw materials and the finished or manufactured goods. The technical school imports and exports brains. And the success of both rests entirely upon quality. The greater the output of finished brain power, on the part of the technical school, the greater the trade of the Empire in material things.

Reviews

TALKS ON TOWN PLANNING. *By H. V. Lanchester.* [*Jonathan Cape, Ltd.*, 11, *Gower Street.*] 4*s.* 6*d. net.*

The dialogue method of putting forward such an up-to-date subject as Town Planning is perhaps a little difficult to follow, and one cannot but sympathise with John Smith, one of the four characters introduced by Mr. Lanchester, when he says, " Thanks, Professor, for that address on Town Planning. I read it all, and though I should like to argue out a few of the points, I liked the way you put most of them. At the same time I don't see how you could say that it linked up with our last talk, which was all about the social organisation."

There is bound to be somewhat of a gap—in fact a series of gaps—in such a method of presentation. To anyone more or less cognisant with the general facts relating to town planning, it is refreshing to have the arguments for and against put in running form, but the points would be quite as effective and perhaps a little more readable if each paragraph did not start with " J. S." or " Prof." to indicate the Sandford or Merton who is supposed to be speaking.

When John Smith gets a little bored, he introduces Professor Jones—Mr. James Wright—and the dialogue becomes a trialogue, even more perplexing to follow, but the Professor is ready for any emergency, and deals with factories and factory smoke as readily as he dealt with the traffic problem. He explains that " up to the present most of the facilities provided for industries have been merely improvised as the need arose. We have just snatched up locations here and there for various purposes, because they were more or less fitting for the purpose in view. Somewhere near at hand a few acres were covered with houses for the workers, and the final result is a confused muddle of big works, little works, business and homes, with no clear scheme of transport and consequent disadvantage all round."

Mr. Wright rightly remarks, " Well, you make the case better than I thought you could ; but I can't say I am quite convinced," whereat the Professor professorially replies, " Oh, that will come when you think it over." And so with housing, on which the Professor's last word is that he has a paper at home on the subject which they can discuss later.

On the subject of Regional Planning, some very shrewd remarks by " Mr. Wright " are well worth reading, and he certainly has the better of " the Professor," who has to slide out of this chapter with " Sorry, but it would take too long now, I'll pick it up next time we meet." When they do meet, John Smith and he have a most interesting chat on the Civic Survey, the splendid series of maps produced during the war being most graphically and delightfully described, but without a mention of the R.I.B.A. or of the work which Mr. Lanchester himself put in during their preparation. He recommends John Smith to go and pay a visit to the record room of the London County Hall and have a look at them. If he goes, he will probably be " the first that ever burst into that silent sea," although many of Mr. Lanchester's readers would like to accompany him to again catch a glimpse of those fascinating diagrams. As one gets more into the book, one appreciates the manner as well as the matter, but, like all stage plays, it takes a little time before one can quite enter into the spirit of the joke.

If only Mr. Lanchester would write a play on these lines, it would go down well, if each scene could have the right setting.

On page 99 one Brown, a painter, appears on the scene, and our friend the Professor has a chance to deal with the picturesque and the æsthetic in town planning, and he is at his best on these lines. The discussion ranges from the buildings of ancient Greece to glints of sun on half-rotten wharves, and every time the Professor scores. " We have got rid of by-laws ; now we call them ' regulations,' so, of course, a new era has begun." These things handicap the imagination of the designer, for " in order to save the weaker from making a howler, the stronger is never allowed to do quite his best."

The chapter on the history of Town Planning, for which the scene is laid in Brown's studio, is in splendid vein, and the mass of suggestive thought and vivid description of ancient communities which is thrown in by " the Professor " is fully in accord with the atmosphere of the artist.

The seaport, the flashlight advertisement and the influence of social centres all come in for the keen, delightful exposition of the enthusiast.

We cannot do better than conclude as we began with our friend John Smith when he says, " I should like to thank you, Professor, for your efforts to convert me to the new religion of the Town Planner. I must say that the point of view you take makes things a great deal more interesting and opens one's eyes to possibilities for the future." The plea for the formation of a civic association in every town everywhere is one that appeals to John Smith. He will think it over and some time in the future may ask for further directions.

W. R. Davidge [*F.*].

SMALL FAMILY HOUSES. *By R. Randal Phillips.* [*London : " Country Life " Ltd.* 10*s.* 6*d.*]

During the last year or so, and following the first great national effort to solve the problem of the small house, there has been a mild boom in what Mr. Randal Phillips calls the " Small Family House."

Very many of these houses have been designed by architects, and Mr. Phillips has performed a useful service not only to the general public, but to the architectural profession, in gathering together a number of typical examples and presenting them to us very adequately, in the form of a most fascinating book.

In these days of high publishing costs it is something of an achievement to produce a volume with so many excellent plates well printed, of irreproachable type, a commendably discreet but far from dull cover, with a dust wrapper showing a particularly delightful pen drawing by Mr. Hepworth, for the very modest sum of half a guinea !

The houses illustrated are for the most part representative of what would appear to be the two main streams of architectural design which at the present obtain the favour of our domestic architects.

It is interesting to compare the modern examples of the Tudor or half-timbered houses with the early or late Georgian types. As shown here they are of an infinite and pleasing variety ; and though it would be invidious where all is so good to pick out any for especial commendation, a commendation that could at best only express the writer's particular view-point, it is only necessary to say that the book contains some representative examples of the work of Messrs. Baillie Scott and Beresford, Hennell and James, Blair Imrie and Angell and Mr. John D. Clarke, to show how good the contents are.

After a brief but illuminating introduction in which are set out all the salient features which should be considered when designing the small house of, say, two sitting rooms with four or five bedrooms, the author passes on to a detailed analysis of each of the 36 houses which make up his book.

Most of the houses are fully illustrated with plans, and a very valuable table of comparative costs is added. Although the æsthetic presentation of these houses varies, according to the tastes of the building owner and his architect, a critical inspection of the plans would indicate that they have many features in common, features which stamp them as post-war in character.

In pre-war days houses of this size were usually either enlarged versions of the country cottage, having as its nucleus what was picturesquely called " the lounge hall," or they aped the pretensions of the smaller country house, complete with dining room, drawing room (mostly unused) and study, with sometimes the added joy of a butler's pantry, all within the curtilage of a small suburban plot !

The modern post-war house is in a class by itself : it is neither an overgrown cottage nor a bijou residence ! A typical example would contain a moderate-sized room used solely for meals and a larger living room in which the family life is lived. There would be a combined kitchen-scullery with either a separate sitting room or bed-sitting room for the maid and the necessary complement of bedrooms.

As always, the change in the manner of building reflects the change in the manner of living.

STANLEY C. RAMSEY [*F.*].

OLD DOMESTIC ARCHITECTURE OF HOLLAND. *Edited by F. R. Yerbury, Secretary of the Architectural Association. Being a series of photographs by the Editor, with introductory notes by Dr. Ir. D. F. Slothouwer, Architect, and measured drawings by E. R. Jarrett, A.R.I.B.A.*

This is a notable addition to the rather slender list of works on Dutch architecture. In his interesting preface Dr. Slothouwer, who is well known in this country and who read a paper on Dutch architecture earlier in the year at the R.I.B.A., points out that " The reciprocal influences of the Dutch and English architecture have not yet been thoroughly studied, but even without special knowledge of the subject it is quite clear that these influences have been very strong." He is insistent on the sturdy honesty of Dutch work. " The Dutch character is most directly shown in the simplest structures, and not in the so-called monumental architecture, and the illustrations in this book show the beauty of a simple brick wall, a well proportioned window or door, or the natural grouping of masses without too much ' architecturing.' In the paradox that the beauty of a piece of music is mostly expressed in its pauses lies a truth which makes it possible to say that the beauty of architecture is felt chiefly where the attention is not made to concentrate on the architecture itself."

The notes on Dutch construction given in the preface are extraordinarily interesting. The date of the introduction of the sash window is given as 1630, though at that time the upper sash was fixed, only the lower half being movable. The window panes were almost invariably made in the proportion of 4 to 5.

It is interesting to learn with regard to the town hall at Edam that " It may be remarked here that in this town hall all the brick is constructed in ' English ' bond, that is to say, consisting of alternate courses of headers and stretchers, and not in ' Flemish.' The latter bond is very rarely found in Holland, and consists of alternate headers and stretchers in every course."

In the photographs, which are carefully chosen and well taken, one is reminded of the *motifs* which inspired several of the English architects something over a quarter of a century ago, and especially of the houses designed by Sir Ernest George in the neighbourhood of Gloucester Road. It may be noticed in most of these photographs how much more interest is given to the design by the fact that the streets are laid with brick paving or stone cobbles instead of the monotonous asphalte.

One is reminded also of the Dutch character of the old South African work at the Cape, of which the tradition was followed by Mr. Herbert Baker in his work for Cecil Rhodes and others.

Running through most of the illustrations there is a character distinctly familiar to English eyes, and many of the photographs might almost have been taken from the waterside at Wisbech or some other Eastern Counties town.

In the photograph of Amsterdam shop-fronts this English feeling is quite apparent, and the little shops would look quite at home in any small old-fashioned town in this country.

The measured drawings are careful pieces of work, but in several cases elevations only are given, with no plans or sections. Details drawn to a larger scale, showing such items as the junction of wood cill with the brickwork, mouldings of sash bars, door jambs, panels and so forth, would have been useful.

The book will be a valuable addition to the library of any architect interested in domestic work, and the details of rural life, such as a farm drawbridge or an old windmill, which it illustrates give it an added interest.

ARTHUR BARTLETT [*F.*].

EXPOSITION INTERNATIONALE DE L'ART ARCHITECTURAL, A BRUXELLES, SEPTEMBRE, 1922. *Bruxelles: Vromant & Co.* 1923.

This is a publication issued by the Société Centrale d'Architecture de Belgique on the occasion of the fiftieth anniversary of its foundation. A section consisting of letterpress and plates, devoted to an account of the early history and extending influence of this society and the works of its members, serves as an introduction to an illustrated survey of an exhibition of architectural design held at the Palais d'Egmont, Brussels, in 1922. It tells us that it was in 1872 that a group of Brussels architects established themselves for the furtherance of the higher interests of their profession. This society is now the national representative of the art of architecture, with a journal

entitled *Émulation*, from which a selection of plates forms part of the attraction of the present publication.

The exhibition of architectural designs which is reviewed does not appear to have been supported by British enterprise. France, America, Italy and Japan are represented. Among the American designs, "Hunting Hill Farm" and a residence at Glen Cove attract attention as reproductions of Tudor and Elizabethan work that are quite remarkable in their ingenuity. They are in marked contrast to the feeling of the latest school as represented in the Italian section, which the editor describes in the apt phrase of "*fausse naïveté*." This portfolio represents in every respect a suitable tribute to the occasion which it celebrates.

C. J. TAIT [*F.*].

The Library

ORNAMENT. Two thousand decorative motifs in colour, forming a survey of the applied arts of all ages and all countries. With an introduction and catalogue by H. TH. BOSSERT. Fo. Lond. [1924]. £9 9s. [Ernest Benn, Ltd.]

This volume treats of colour decoration and covers a wide field of research. It is fully and well illustrated with examples of pattern and other designs drawn from European sources, the Near and the Far East, Africa, America, New Zealand and other localities.

The suggestions it contains should be a useful supplement to the volumes already in the Library that are concerned with the same subject.

H. C. C.

CONCRETE COTTAGES, BUNGALOWS AND GARAGES. By ALBERT LAKEMAN. 2nd edition, 4o. Lond. [1924]. 5s. [Concrete Publications, Ltd.]

A useful review of the whole subject, with illustrations of the most usual processes of block and *in situ* concrete building, including illustrations and descriptions of a number of machines for making blocks, etc.

The student should be warned, however, that the comparative tables of prices are now quite out of date.

C. E. S.

THE ARCHITECT'S LAW MANUAL. By CLINTON H. BLAKE, Jr., A.M., LL.B. 8o. New York [1924]. 25s. [The Pencil Points Press, Inc., New York.]

A work written by a member of the New York and Federal Bars, and hence primarily addressed to American readers, but none the less of considerable service and interest to English architects. As the author says, truly enough, "an architect cannot be his own lawyer, any more than a lawyer can be his own architect." The book contains some specially useful and suggestive Forms of Agreement, such as those defining with precision the relations between the architect and client, and the terms, legally expressed, to be adopted, as between joint-architects, or those associated in practice for a particular job, but not partners. It contains, what is worthy of comparison with our own R.I.B.A. Form, that between Owner and Builder, for which the American Institute of Architects is responsible.

C. H. T.

A new catalogue for the R.I B.A. Loan Library has been recently compiled and may be purchased at the Institute. Price 1s. 6d. Postage 3d. extra.

WATER-COLOURS AT THE INSTITUTE.

It was a happy thought to adorn the walls of the Institute last Monday night, on the occasion of the President's inaugural address, with a selection of water-colours by the late Thomas E. Collcutt and the late Sir Ernest George, R.A., both past Presidents, and both recipients of the Royal Gold Medal in their day. Sir Ernest George's water-colour work is well known. But it was not formerly known to the writer, and it may not be known to many members of the Institute, and to students and others, that the series of some fifty of his sketches at present displayed on the Institute walls are the property of the Institute. Grip in composition, a rare combination of firmness and playfulness in drawing; unerring sense of light and atmosphere, with skill in preserving these qualities or attributes on solid masses as well as in the latter element itself; colour of the purest that water can help you to render, are perhaps some of the attributes for which these sketches are chiefly remarkable. That they are considered by the writer to have more in them than there is in the larger "pictures" by the same hand may be merely a personal predilection and one entirely unwarranted on his comparatively limited knowledge of the larger drawings.

Were the half dozen "'07" series of sketches—of Algeciras, Gaucin, etc.—all that could be got together as representative of Collcutt in that vein? They are only small but they stand out in a class alone as against other drawings by him that are shown with them. They would hold their own anywhere. They might be the work of a life-long all-out artist instead of the sportive play of one of the busiest architects of above two generations. If there are such other of his sketches it is hoped members of the Institute may have an opportunity of seeing them also on some future occasion. They are purposeful, full of conviction, alive, and must have been done at lightning speed. Figures, where introduced—whether animals or people—are expressive, and always happily placed, apparently without any consideration at all. The clear and free pencil line in these sketches is full of delight; the washes are done once for all, whether light or dark; whites are left with judgment and confidence and without any coldness in the result; the subjects chosen are delightfully simple and suggestive, and it is only to be regretted that there were not more of them available for exhibition on this occasion.

FRANK LISHMAN [*F.*].

PRESENTATIONS TO THE LIBRARY.

The Oxford Conference has had a pleasant consequence in the nomination of the Vice-Chancellor, Mr. J. Wells, M.A., Warden of Wadham, as an Hon. Associate of the R.I.B.A. and in his welcome gift to the Library of his various books on Oxford. These are:—"The Charm of Oxford," "Oxford and Oxford Life," "The Oxford Degree Ceremony," "Oxford and its Colleges" (The Little Guides Series).

The Library is also indebted to the Marquess Curzon of Kedleston, K.G. (Honorary Fellow), who has presented a dedicated copy of his admirably illustrated monograph "Kedleston Church, an account, historical, descriptive and archæological," which was printed for private circulation by the Chiswick Press in 1922.

Franco-British Union of Architects

FOURTH ANNUAL GENERAL MEETING

BY H. P. CART DE LAFONTAINE, SECRETARY-GENERAL OF THE UNION

The fourth Annual General Meeting and Congress of the Franco-British Union, which was held in Paris on 9 to 12 October, demonstrated the success which has attended the idea of the group of British and French architects that a society which existed mainly to provide architects of the two countries with a means of getting to know each other would—to use the well-known phrase—"supply a long felt want."

Unfortunately it was necessary to defer the meeting originally fixed to take place in June on account of other important meetings which would have prevented a number of our British members from attending, and even the altered date was not without its defects in this respect.

Consequently the date for the next meeting, which will take place in London, has been fixed for the middle of July 1925, when it is hoped many of those who were unable to attend this year will be present.

Those of us who went over to Paris recently will agree that the meeting was an unqualified success ; the visits to modern buildings were of great interest, and the way in which the spare moments (which had purposely been left free in the programme for informal visits arranged by members themselves) were made use of encourages us to hope that more opportunities of this kind will be provided in the future.

The official meeting, which was held at the rooms of the Société des Architectes Diplômés, was mainly concerned with the election of the new *Bureau*, or Council, for the ensuing session : this year an entirely new Bureau was elected in accordance with the provision in the *Statuts*, designed to prevent that body from outlasting its period of usefulness, the only exceptions being—again in accordance with the *Statuts*—the Hon. Secretary-General, the Hon. Treasurer, and the Hon. Secretaries of the French and British committees, who were unanimously re-elected.

The composition of the Bureau thus elected for the ensuing session is as follows :

President : Paul Waterhouse.
Vice-President : A. Defrasse.
Secretary-General : H. P. Cart de Lafontaine.
Treasurer : J. M. Poupinel.
Hon. Secretary, British Committee : A. J. Davis.
Hon. Secretary, French Committee : A. Schneider.
Members : S. D. Adshead, Sir John J. Burnet, H. C. Bradshaw, E. G. Dawber, H. M. Fletcher, The President of the S.A.D.G., C. Girault, A. Bérard, H. Destors, J. Hébrard, C. de St. Maurice.

As a result of discussions which had previously taken place on both sides of the Channel it was decided that the union could usefully undertake an enquiry into the difficult question of the regulation of international architectural competitions, and a special committee consisting of the following members was duly elected at one meeting : A. Defrasse, S. D. Adshead, Arthur J. Davis, H. V. Lanchester, A. Legros, A. Louvet, Sir John Simpson, H. Tournaire.

From recent experience it was clear that this was the one cloud on the horizon liable to disturb a perfect understanding between architects of the two countries, and it was therefore felt that it was the peculiar province of the Union to investigate the causes which had created a feeling of dissatisfaction with the working of the Regulations, as settled by the *Comité Permanent International des Architectes* in 1908, and, if possible, to suggest such amendments or additions to these regulations as would be acceptable to the architectural societies in Great Britain and France.

It is hoped that this policy of boldly " grasping the nettle " will be justified by results, and that such an investigation by an impartial body of the leading members of the profession in both countries may lead to the adoption of the recommendations which will be presented in a report at the next general meeting of the Union.

The programme of visits and social functions included an inspection of the new branch of the *Banque de France* at the Place Malesherbes, a visit to the opera, and another to the *Piscine des Tourelles*.

At the Bank, we had the advantage of the personal explanations of MM. Defrasse, architect to the *Banque de France*, and Février, the architect of the original structure. This was designed as a private residence for Monsieur Gaillard, a wealthy manufacturer and a collector of architectural fragments, of considerable discernment. The problem which Monsieur Février was called upon to solve was to provide a town mansion, having reasonable modern convenience, which should, at the same time, be in harmony with the fifteenth century doors, panelling, and fireplaces dear to the heart of his client. When (as Monsieur Defrasse told us) the premises were acquired by the Bank he had to decide whether the original building should be retained and adopted or whether it was preferable to erect an entirely new structure in its place.

The solution of this problem is extremely interesting, and has resulted in a scheme which includes all the latest features of a modern French bank—which appear more complex than our own requirements—and at the same time preserves the original character of the house and is in harmony with its contents.

The main hall of the bank is placed on the first floor, and occupies what was previously an open courtyard, while in the corresponding space below is a strong room of unusual dimensions capable of accommodating some 500 persons.

This is designed to resist aerial bombardment, and is completely surrounded by a moat, some six feet wide, and containing 8 feet of water when filled. Access to the strong room is by a drawbridge which is operated by electricity.

This strong room is evidently designed, not only for the safe keeping of valuables, but also (as Monsieur Defrasse hinted in his remarks) as a place of refuge for clients in case of civil disturbance or war, and is an index of that post-war nervousness which is a (perhaps not extraordinary) characteristic of the clientèle of the bank in this wealthy quarter of Paris.

Space does not permit of a detailed description of the other buildings visited : the intricate maze of the Opera

and Conservatoire de Musique, the large, though uninspiring open-air public bath at Les Tourelles, the interesting concrete construction of the new church of St. Louis at Vincennes, by Monsieur Marrast, or the skilful use of a difficult site in the fine telephone exchange, the *Central de Flerus*, by Monsieur Jules Godefroy.

The official banquet, which was held at the *Salles Lutetia* on Saturday, 11 October, was attended by many of our distinguished French confrères and presided over by Monsieur Paul Léon, the Directeur des Beaux-Arts, representing the *Ministre de l'Instruction Publique et des Beaux-Arts*., Monsieur Herriot, who was unable to be present, was represented (as Minister for Foreign Affairs) by Monsieur Roussel le Roy, and the British Ambassador, who was likewise unable to be with us, was represented by Mr. Yeames.

The toast of His Majesty the King, Queen Mary, and the other Members of the Royal Family was given by the retiring President, Monsieur Godefroy, who also gave a brief address of welcome to the British members. After a brief but eloquent reference to the interest in the growth and aims of the Union which had been shown by the French Prime Minister and H.E. the British Ambassador, Monsieur Godefroy said Monsieur Paul Léon, who was known on both sides of the Channel as an authority on matters of art, demonstrated by his presence his lively interest in the progress of the Union. Continuing his address, Monsieur Godefroy referred to the growth of the entente among architects, and said rarely had there been a time when it had been more essential that they should continue to pull together. Their Franco-British Union should be, for both countries, an inexhaustible well of friendship. He would like to see in the future others coming into existence, on similar lines, between the artists and writers of both countries.

Unfortunately, as they were well aware, there were other alliances springing into existence, the alliances of gold and gain, of which neither their hearts nor their minds could approve. In conclusion, Monsieur Godefroy said that they would all join in expressing sincere regret at the absence of their President, and he hoped their British guests would take back a message of sympathy and affection to Mr. Waterhouse, together with their cordial good wishes and thanks to the President of the Royal Institute of British Architects for the continued assistance which they welcomed from the distinguished body over which he presided.

Sir John Simpson briefly proposed the health of the President of the French Republic, and Monsieur Paul Léon expressed his pleasure in being able to welcome the British members on behalf of the French Government.

The proceedings terminated on Sunday afternoon with an official reception given by the French Ministry of Fine Arts in honour of the British visitors, who were received by Monsieur Paul Léon at the fine house left to the State as a "*Maison des Artistes*" by the late Baron de Rothschild. The upper floor has been transformed into a magnificent library in which may be found many unique and valuable works on all branches of European, Asiatic and American art. The nucleus of this fine collection was bequeathed to the State by the late Monsieur Doucet. The library, as the curator informed me, is open to all *bona fide* students.

Correspondence

ASSISTED HOUSING SCHEMES.

Pigott *v.* Wandsworth Borough Council.

7 New Square, Lincoln's Inn, W.C.,
1 November 1924.

To the Editor, Journal R.I.B.A.,—

Dear Sir,—The judgment given by Mr. Justice Talbott on 20 October in this case is one of first-rate importance to architects who have been acting on behalf of Local Authorities in connection with Assisted Housing Schemes.

Mr. Pigott was appointed by the Wandsworth Borough Council in October 1919 as its architect for what was called the Magdalen Park Estate Housing Scheme, G.H.M. No. 4 being part of the contract between the parties. The number of houses in the scheme as approved by the Ministry of Health was 376.

In addition to this scheme the Borough Council undertook two other schemes in quite different places in their district in connection with which other architects were appointed to act.

In due course the architect submitted for payment his account to the Borough Council in accordance with what he considered to be the true meaning and intent of G.H.M. No. 4. The account thus rendered showed a balance of fees due to the architect amounting to £1,270. The Borough Council was prepared to pay this sum, but on submission to the Ministry of Health the latter body stated that upon its interpretation of G.H.M. No. 4 £139 only was due to the architect, this sum being arrived at by the Ministry apparently on the basis of "pooling" the fees set down in G.H.M. No. 4 over the whole of the schemes on sites dealt with by the Borough Council through its different architects.

In giving judgment for Mr. Pigott the Judge said, "I cannot think that that is the true construction of this document (G.H.M. 4), and if it had been it would certainly have been an exceedingly misleading document to put before the architect."

This judgment confirms the view held and frequently expressed by architects connected with the Assisted Housing Schemes—viz., that the pooling of fees was not mentioned in G.H.M. No. 4, and that the issue by the Ministry of memoranda subsequent to the date of appointment of the architect could not be held to be retrospective in effect, and the architect was therefore in no way bound by them unless he had specifically contracted to be so bound.

The thanks of the profession are due to Mr. Pigott for having the courage of his convictions and proceeding

to the Courts to obtain a confirmation of what on the face of it seems to be the only reasonable interpretation of the Memorandum.*—Yours truly,

HERBERT A. WELCH [*A.*].

* Mr. R. Mountford Pigott desires to make it quite clear that his clients, the Wandsworth Borough Council, were not in any way responsible for withholding the balance of his fees, which would have been paid if the Ministry had not refused their concurrence. The Council afterwards offered £1,100 (which Mr. Pigott agreed to accept), but the Ministry of Health again refused their consent, and Mr. Pigott was therefore obliged to take the opinion of the Court on his claim.—EDITOR.

THE LATE THOMAS EDWARD COLLCUTT.

21 *October* 1924.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—Nothing more befittingly appropriate could be written about our late beloved friend and distinguished Past President, Thomas Edward Collcutt, than the admirable obituary notices contributed to the current number of the Institute JOURNAL by Messrs. J. S. Gibson and Andrew N. Prentice. May I be allowed to supplement what they have so well said, although I cannot claim the same intimate associations with their late master? I enjoyed the privilege of his friendship for over fifty years and our connection arose from the fact that I succeeded him, after a brief interregnum, in the post of architect to the Borough of Brighton, using the same rooms at the Town Hall, in the office of P. C. Lockwood, then Borough Engineer, till I resigned in 1872 in consequence of Passmore Edwards's offer which induced me to become associated with the professional press. Collcutt had to do with the conversion of the Dome of John Nash's Royal Pavilion into a concert hall, and I subsequently dealt with the adjacent premises by transforming the Prince Regent's Stables into the present Picture Gallery with Museum rooms and Public Library attached overlooking the Pavilion grounds. We consequently knew many of the same people and our early associations were maintained through life. In the last note received from him during the present year, addressing me as ever "Dear Maurice B.," he alluded to those days in Sussex. On his return from South Africa, just twelve months ago, he wrote the kindest possible letter (which I value beyond words) on my retirement from the *Building News*. Collcutt was always the same true friend. His eminent success made no difference. I recall his first London office in Essex Street, Strand, where I saw him frequently, working away at competitions more often than not. E. W. Godwin had rooms in the same house upstairs. Before that date he built himself a house in Ravenscourt Park, Hammersmith, also a doctor's residence near by in Goldhawk Road. Both still stand as elementary and unpretentious examples of inexpensive domestic work marked by intuitive taste and a cultured individuality. Both comparatively unimportant, but worthy of mention now, else probably they might be overlooked when enumerating his subsequent achievements on which his contemporaries set so high a value and which posterity can never fail to admire.

MAURICE B. ADAMS [*F.*]

A SELECTION FROM THE LIST OF WORKS DESIGNED BY MR. COLLCUTT.

Through the courtesy of Mr. Stanley Hamp it is now possible to publish a selected list of the works designed by Mr. Collcutt in accordance with the wish expressed by Mr. J. S. Gibson in his obituary notice in the last issue of the JOURNAL (p. 667).

1. *Public Buildings.*—Wakefield Town Hall, Blackburn Free Library, Bechstein Hall, Imperial Institute, Palace Theatre, P. & O. S.N. Co. Exhibit, Paris Exhibition; Messrs. Collinson and Lock, Paris Exhibition.

2. *Hotels.*—Savoy Hotel Extensions, Strand, W.C.; Simpsons Restaurant, Strand, W.C.; Hotel Burlington, Boscombe; Hotel at Algeciras; University Hotel, Endsleigh Gardens; Victoria Hotel, St. Heliers, Jersey; King's Hall, Holborn Restaurant.

3. *Domestic Buildings.*—36, Bloomsbury Square; house at Paris Exhibition; Gloucester House, Piccadilly; The Croft, Totteridge; house at Totteridge for A. Howard, Esq.; house at Mill Hill for W. Howard, Esq.; Rivernook for G. Gregory, Esq.; Warwick Castle for Lord Brook; house at Sunningdale for G. Wills, Esq.; "Coldharbor," Liphook, for Sir Thomas Sutherland; Wadia Memorial, Brookwood.

4. *Business Premises.*—Lloyd's Registry of Shipping, Fenchurch Street; City Bank, Ludgate Hill; Messrs. Warings, Oxford Street; Messrs. John Lewis and Co., Oxford Street; P.&O.S.N. Co.'s Offices, Leadenhall Street

5. *Clubs.*—Athenaeum Club, alterations.

6. *Ship Interiors.*—P. & O. S.N. Co.'s steamships *Marmora*, *Macedonia*, *Morea*, *Moldeux* (part), *Mongolia*, *India* (music salon), *China* (music salon), *Egypt* (music salon), *Arabia* (music salon).

7. *Scholastic.*—Mill Hill School: Ridgeway House, Collinson House, Big School, The Scriptorium; Eton College: Master's House; Wye Agricultural College, Kent.

At the opening meeting of the Institute on Monday night Mr. Arthur Keen (Hon. Secretary) moved "That the regret of the Institute at the loss of Thomas Edward Collcutt be entered on the minutes, and that a message of sympathy and condolence be sent to members of his family."

The Resolution was carried by members rising in their places.

THE PRESIDENT'S OPENING ADDRESS.

Among those who were present at the opening meeting of the Institute on Monday were:

His Grace the Marquess of Northampton; the Very Rev. The Dean of Peterborough; The Right Hon. Lord Sumner; Sir Ryland Adkins, K.C.; The President of the Surveyors' Institution (Sir Edwin Savill); The President of the Society of Architects (Mr. A. J. Taylor); The Mayor of Westminster (Councillor Edgar Horne); Sir Thomas Fermor-Hesketh, Bart.; Sir George Frampton, R.A.; Mr. L. M. Gotch; Mr. H. G. Gotch; Mr. E. J. Partridge; Mr. H. Hankinson; Mr. H. J. Bye; Mr. Basil Davis; Mr. C. F. A. Voysey; and Mr. John Bond (Clerk to the Kettering U.D.C.)

Allied Societies

YORK AND EAST YORKSHIRE ARCHITECTURAL SOCIETY.

PRESIDENTIAL MEDALLION.

The pendant is executed in silver gilt with azure enamelled convex section oval ground, upon which the coats of arms of the important centres within the area of the York and East Yorkshire Architectural Society are depicted—viz., York, in the centre, Hull on the left, Beverley on the right and Scarborough below. The coat of arms of York consists of the Cross of St. George on which are Five Lions that were presented by William I

to the five brave burgesses of York who defended the city; the Cap of Maintenance conferred by Richard II when bestowing the title of Lord Mayor of York on William de Selby in 1389, Sword of State presented by the Emperor Sigismund, Richard's father, and city mace. The coat of arms of Hull owes its origin to the Merchant Adventurers likening themselves to the Three Merchant Kings of the East, who presented themselves with offerings at Bethlehem, assumed the Three Crowns as a device for their seal, which has subsequently been adopted by the town. The coat of arms of Beverley has three azure coloured wavy bars and a beaver with its head turned biting off its fur. The coat of arms of Scarborough show a ship, watch tower, and a star. Above, the keys of St. Peter complete the series.

The devices are supported by the title of the Society in gold letters on a raised ground, and capped by the White Rose of York.

The size of the pendant is $2\frac{1}{2}$ inches by $3\frac{1}{2}$ inches, and was executed by Messrs. Fattorini and Sons, Ltd., Bradford.

The Society was founded in 1882 and has a total membership of 69. The President is Mr. Stephen Wilkinson, A.F.C., F.R.I.B.A., and the Hon. Sec. is Mr. J. E. Reid, Licentiate R.I.B.A.

THE LIVERPOOL ARCHITECTURAL SOCIETY.

For November and December the Liverpool Architectural Society has arranged the following papers :—

Nov. 11th.—" The Use of Reinforced Concrete in Architecture," by Maxwell Ayrton [*F.*]

Nov. 25th.—" The Relation of the Liverpool Corporation Act, 1921, to Architects," by Charles A. R. Swan, Liverpool City Building Surveyor.

Dec. 9th.—" Permanency in Building," by J. E. Marshall, M.B.Arch.M.S.A.

READING SOCIETY OF ARCHITECTS.

In conjunction with the Workers' Educational Association lectures will be given in the University College Hall, Reading, as follows :—

Nov. 26th.—" The Home and the City," by Raymond Unwin [*F.*].

Jan. 7th.—" The Rebuilding of Ypres," by G. Topham Forrest [*F.*].

THE SOCIETY OF ARCHITECTS' NEW PRESIDENT.

At a special general meeting of the Society of Architects held on 16 October Mr. Alfred John Taylor, F.S.Arc., of Bath, was elected President of the Society for the session 1924–1925, commencing on 1 November. He succeeds Mr. E. J. Partridge, F.S.Arc., who served the office of President for two consecutive years, during the latter of which he took a leading part in the negotiations which resulted in an agreement for the amalgamation of the Society of Architects with the Royal Institute of British Architects, which it is anticipated will shortly be effected.

THE ANCIENT WORLD AND RECENT EXCAVATIONS.

A course of lectures on the comparative archæology of the ancient world has been begun by Claire Gaudet at the British Museum (by kind permission of the Trustees) on Thursday afternoons at 4.30 p.m., and also an evening course at the Chelsea Polytechnic on Fridays at 8 p.m.

The object attempted is to link together the more important archæological discoveries of recent years in Mesopotamia, Egypt and the Mediterranean.

The subject is being treated contemporaneously as nearly as possible, comparing the civilisations and architectural forms as they travelled and evolved westward, showing how greatly past history is due to the great work of excavation.

Competitions

UGANDA RAILWAY, NEW OFFICE, NAIROBI.

INVITATION TO ARCHITECTS.

Competitive designs are invited from qualified architects, being British subjects, for proposed new Railway offices to be erected in Nairobi, Kenya Colony.

The conditions of competition will be in accordance with the regulations of the Royal Institute of British Architects.

Mr. William Dunn, F.R.I.B.A., has been appointed to act as Assessor.

Premiums of £200 and £100 will be paid to the author or authors of the designs placed first and second by the Assessor.

For Conditions of Competition, Instructions to Competitors and Plan of Site, application should be made to the undersigned, accompanied by a deposit of one guinea, which sum will be returned on receipt of a bona fide design, or if the applicant declines to compete, on return of the plan, instructions and conditions not later than the 1st day of February, 1925.

Photographs of typical existing buildings in Nairobi can be seen at the Crown Agents' Offices.

Designs must be received at the offices of the General Manager, Uganda Railway, Nairobi, Kenya Colony, not later than the 28th February, 1925.

THE CROWN AGENTS FOR THE COLONIES,
4, Millbank,
Westminster, S.W.1.

RECONSTRUCTION OF THE KONINGINNE BRIDGE, ROTTERDAM.

With reference to the announcement of this competition in a recent issue of the JOURNAL, His Majesty's Consul-General at Rotterdam has informed the Department of Overseas Trade that he has received from the Rotterdam municipal authorities a series of 72 questions and answers amplifying and explaining the technical points which arise in connection with the plans.

As a translation would involve considerable time and difficulty His Majesty's Consul-General suggests that any British firm desiring specific information on the subject should communicate with him direct.

BETHUNE MEMORIAL TO THE MISSING.

The Imperial War Graves Commission desire Members and Licentiates of the Royal Institute to be reminded that applications to take part in the above Competition from persons other than those who had signified their intention of competing on or before 1 January 1924 cannot be considered. Due notice of this regulation was published in the Professional Press on various occasions during August and September, 1923.

MASONIC MEMORIAL COMPETITION.

Apply to The Grand Secretary, Freemasons' Hall, Great Queen Street, W.C.2. Last day for applying for conditions, 23 August 1924. Deposit, £1 1s. Closing date for receiving designs, 1 May 1925. Assessors: Sir Edwin Lutyens, R.A. [*F.*] (appointed by the President); Mr. Walter Cave [*F.*], Mr. A. Burnett Brown, F.S.I.

MANCHESTER ART GALLERY.

Apply to the Town Clerk, Town Hall, Manchester. Closing date for receiving designs, 20 January 1925. Assessors: Mr. Paul Waterhouse, F.S.A. [*F.*], Professor C. H. Reilly, O.B.E. [*F.*], Mr. Percy S. Worthington, Litt.D., F.S.A. [*F.*].

SOUTHPORT: FIRST CHURCH OF CHRIST SCIENTIST; CHURCH AND SUNDAY SCHOOL.

Apply to Messrs. J. E. Sanders & Son, A.R.I.B.A., 219a, Lord Street, Southport. Closing date for receiving designs, 1 December 1924. Deposit 10s. Assessors: Messrs. J. E. Sanders & Son.

BARROW HILL MEMORIAL CLUB COMPETITION.

Members and Licentiates of the Royal Institute of British Architects must not take part in the above competition, because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

IAN MACALISTER, *Secretary*.

"THE VENTILATION OF A POLICE COURT."

With a view to promoting the study of modern methods of ventilation, the Worshipful Company of Fanmakers has decided to institute an annual competition and to award its silver medal for an essay adjudged the best by the Assessors, Mr. John W. Cooling, M.Sc.[Tech.], A.M.I.Mech.E., Mr. Alan E. Munby, M.A. [*F.*], and Mr. H. D. Searles-Wood [*F.*]. The subject for the present year is "The Ventilation of a Police Court." The competitors must be of British nationality and not over 25 years of age. Particulars of the competition may be obtained from the clerk to the Company, 62, London Wall, E.C.2.

R.I.B.A. (ALFRED BOSSOM) TRAVELLING STUDENTSHIP.

Associates of the Royal Institute of British Architects who have not passed through one of the Schools included in the competition are required to deliver their designs and report (in competition for a Silver Medal) at the Royal Institute not later than 5 p.m. on Monday, 1 December, 1924.

The following are the Schools included in the competition:—

The Architectural Association (London).
University of London School of Architecture.
Robert Gordon's Colleges, Aberdeen.
Glasgow School of Architecture.
University of Liverpool School of Architecture.
University of Manchester School of Architecture.
McGill University, Montreal, School of Architecture.
Edinburgh College of Art.
The Technical College, Cardiff.
The Polytechnic, Regent Street, W.1.
Northern Polytechnic Institute, Holloway.
L.C.C. School of Building, Brixton.

Notices

THE SECOND GENERAL MEETING.

The Second General Meeting (Ordinary) of the Session 1924–25 will be held on Monday, 17 November 1924, at 8 p.m., for the following purposes :—

To read the Minutes of the First General Meeting (Ordinary) held on 3 November 1924; formally to admit members attending for the first time since their election.

To read the following Paper : " Planning for Good Acoustics," by Hope Bagenal [*A.*].

BUSINESS GENERAL MEETING.

An election of members will take place at the Business General Meeting to be held on Monday, 1 December. The names and addresses of the candidates (with the names of their proposers), found by the Council to be eligible and qualified for membership according to the Charter and Bye-Laws and recommended by them for election, are as follows :

AS FELLOWS (21).

ARCHER-BETHAM : ARTHUR [*A.* 1920], 44, Park Lane, Croydon ; 59, Oakley Street, Chelsea, S.W. Proposed by Stanley Hamp, Robert Atkinson, W. H. Ansell.

BIGGS : ALFRED ERNEST [*A.* 1902], 1, Museum Street, W.C.1.; 65, Grove Hill Road, S.E.5. Proposed by Bernard Dicksee, George A. Lansdown, Wm. Woodward.

CATHCART : WILLIAM D'ARCY [*A.* 1909], Puzey Chambers, Manica Road, Salisbury, S. Rhodesia. Proposed by Stanley Hamp, Arthur Keen, Claude W. Ferrier.

CULLIFORD : LEONARD ARTHUR, F.S.I. [*A.* 1914], 3, John Street, Bedford Row, W.C.1 ; Hotel Norman, Carlton Road, Putney, S.W. Proposed by George A. Mitchell, Wm. Woodward, C. H. Simpson.

DAWSON : NOEL JOHN [*A.* 1907], 1, Rue de l'Ancienne Bourse, Alexandria, Egypt ; Union Club, Alexandria. Proposed by the Council.

HAKE : GUY DONNE GORDON [*A.* 1911], Royal West of England Academy School of Architecture, Bristol ; 1, The Paragon, Clifton, Bristol. Proposed by E. Stanley Hall, W. A. Forsyth, Maurice E. Webb.

HAYS : JOHN WILSON [*A.* 1918], Central Chambers, Wingate, Co. Durham, and 52, Camden Street, North Shields ; " The Homestead," Wingate, Co. Durham. Proposed by Thomas R. Milburn, W. T. Jones, G. Reavell.

KNIGHT : EDWARD FROST [*A.* 1899], Inwood, Alton Road, Parkstone, Dorset. Proposed by Arnold Mitchell, Arthur Keen, Geoffrey C. Wilson.

LETHBRIDGE : JAMES MORTON [*A.* 1903], 205, Archway Road, Highgate, N.6. Proposed by V. D. Horsburgh, Philip J. Turner, Professor Ramsay Traquair.

MACLENNAN : THOMAS FORBES [*A.* 1903], 7, South Charlotte Street, Edinburgh ; 14, Cluny Terrace, Edinburgh. Proposed by J. M. Henry, Thomas P. Marwick, John Wilson.

MURRELL : HAROLD FRANKLYN [*A.* 1906], 35, Bedford Row, W.C.1 ; 8, Lancaster Road, West Norwood, S.E.27. Proposed by Beresford Pite, C. H. B. Quennell, Walter R. Jaggard.

NOTT : GEORGE [*A.* 1907], 17, New Street, Leicester ; The Old School House, Kirkby Muxloe, near Leicester. Proposed by J. J. Joass, Robert Atkinson, J. Stockdale Harrison.

OWEN : WILFRID SCOTTER, M.A., P.A.S.I. [*A.* 1912], 9, King's Bench Walk, Temple, E.C.4 ; 92, Harvard Court, N.W.6. Proposed by J. Gordon Allen, Jonathan Simpson, Alfred Burr.

PIGOTT : RICHARD MOUNTFORD, M.C. [*A.* 1913], 35, Bedford Row, W.C.1 ; 53, West Side, Wandsworth Common, S.W.18. Proposed by Beresford Pite, William A. Pite, C. H. B. Quennell.

RIPLEY : CEDRIC GURNEY [*A.* 1914], Messrs. Palmer and Turner, Union Building, Shanghai, China ; Bowthorpe, Ipswich. Proposed by Ed. J. May, Paul Waterhouse, Stanley Hamp.

SMITH : JAMES [*A.* 1906], Oficina de Vin y Obras, Ferro Carril del Sud, Buenos Aires, Argentine. Proposed by Jas. W. Farmer, E. Lauriston Conder, David B. Hutton.

THORNTON : HAROLD, B.A. [*A.* 1911], 11, Bond Street, Dewsbury ; West Croft, Park Road, Dewsbury. Proposed by Fredk. W. Ridgway and the Council.

TOY : SIDNEY, F.S.A. [*A.* 1923], 1, Cloisters, Temple, E.C. Proposed by Alexr. G. Bond, P. D. Hepworth, W. D. Caröe.

TURNER : HORACE GEORGE [*A.* 1910], Messrs. Hemmings and Berkley, Hankow, China. Proposed by Professor A. E. Richardson, Henry Tanner, Alfred Cox.

WELCH : HERBERT ARTHUR [*A.* 1911], 7, New Square, Lincoln's Inn, W.C.2 ; Devon House, Turner Drive, Golders Green, N.W.11. Proposed by Sir Edwin L. Lutyens, Francis Jones, Herbert T. Buckland.

WETENHALL : EDWARD BOX, F.S.I. [*A.* 1894], 38, Parliament Street, S.W.1 ; Stanstead, Cheam Road, Sutton. Proposed by Josiah Gunton, John E. Newberry, R. Langton Cole.

AS ASSOCIATES (15).

BHEDWAR : CAVASJI KAIKHUSHRU [*Special Examination*], 17, Elphinstone Circle, Fort, Bombay, India. Proposed by Professor A. E. Richardson, Arthur Stratton, Walter R. Jaggard.

BLACKBURNE : SHIRLEY LANPHIER [*Final Examination*], 16, Endsleigh Street, W.C.1. Proposed by Robert Atkinson, W. Curtis Green, E. Stanley Hall.

BLAKE : JOHN PATRICK, P.A.S.I. [*Special Examination*], " Norvic," Hibernia Road, Hounslow. Proposed by J. Osborne Smith, C. Lovett Gill, Stanley C. Ramsey.

BRADEN : KEITH ARNOLD [*Special War Examination*], 1, Dorset Square, N.W.1. Proposed by Professor A. E. Richardson, Arthur J. Davis, T. P. Bennett.

BRIGHTIFF : CHARLES HENRY [*Final Examination*], 6, Rutland Park Mansions, Cricklewood, N.W.2. Proposed by John H. Blizard, John Hudson, W. L. Trant Brown.

CAMPBELL : ARCHIBALD ALASTAIR VIVIAN [*Special Examination*], c/o Union Bank of Australia, 71, Cornhill, E.C. Proposed by W. Curtis Green, E. Guy Dawber and the Council.

CARELESS : SEFTON STOCKFORD [*Special Examination*], " Cotswold," Pinner Hill, Middlesex. Proposed by Robert Atkinson, T. Frank Green, Herbert T. Buckland.

COBB : ROBERT STANLEY, M.C. [*Special Examination*], P.O. Box 58, Nairobi, Kenya Colony. Proposed by F. T. W. Goldsmith, E. J. Gosling, W. H. Hobday.

COOPER : CARILEF MILES, M.C., M.A.Oxon [*Special War Examination*], Ulpha, Bourne End, Bucks. Proposed by H. P. G. Maule, W. A. Forsyth, W. D. Caröe.

DE BURGH : ROBERT STANLEY [*Special War Examination*], " Deer Leap," St. Cross, Farnham, Surrey. Proposed by Robert Atkinson, H. R. Gardner, C. E. Varndell.

EVE : CECIL GEORGE WILLIAM [*Final Examination*], Netherleigh, South Nutfield, Surrey. Proposed by Professor A. E. Richardson, C. Lovett Gill, Sir Banister Fletcher.

GEESON : ALFRED GODWIN [*Special Examination*], Erskine Chambers, 13, New Street, St. Martin's, Leicester. Proposed by J. Stockdale Harrison, William M. Cowdell, Arthur H. Hind.

HODGES : ALFRED WALTER [*Final Examination*], 10, Fortescue Road, St. Thomas, Exeter. Proposed by Alexr. G. Bond, Percy Morris, James Jerman.

REILY : ERIC [*Special Examination*], Office of Works, Government of Northern Ireland, 118, Royal Avenue, Belfast. Proposed by Robert M. Young, N. Fitzsimons, Herbert Langman.

WILSON : JAMES MOLLISON [*Special*], c/o T. Alison, Esq., Rosehill, Dalkeith, Scotland. Proposed by James S. Gibson, Alexr. G. Bond, Walter S. A. Gordon.

AS HON. ASSOCIATES (6).

BRANGWYN : FRANK, R.A., R.P.E., Hon. R.S.A., Member of the Institut de France, Academy of St. Luke, Rome, Royal Academy, Berlin, etc.; Temple Lodge, Queen Street, Hammersmith, W. Proposed by the Council.

MACLAGAN : ERIC ROBERT DALRYMPLE, C.B.E., Director of the Victoria and Albert Museum, South Kensington, S.W.7. Proposed by the Council.

SQUIRE : JOHN COLLINGS, Swan House, Chiswick Mall, W.4. Proposed by the Council.

WALSTON : SIR CHARLES, Fellow of King's College, Cambridge, Litt.D. Cantab and Trinity College, Dublin, L.H.D. Columbia University, New York, Ph.D. Heidelberg, Late Reader in Classic Archæology, Director of Fitzwilliam Museum and Slade Professor of Fine Arts, Cambridge, etc.; Newton Hall, Newton, Cambridge. Proposed by the Council.

WELLS : JOSEPH, M.A., Warden of Wadham College and Vice-Chancellor of University of Oxford, Wadham College, Oxford. Proposed by the Council.

YERBURY : FRANCIS ROWLAND, "White Steading," Amersham, Bucks. Proposed by the Council.

AS HON. CORR. MEMBER (1).

OSTBERG : RAGNAR, Professor at the Royal Academy of Art, Sweden, 10, Blasieholmstorg, Stockholm. Proposed by the Council.

ARCHITECTURAL PUPILS IN OFFICES.

Upon the advice of the Board of Architectural Education, the Council of the Royal Institute recommend all Members and Licentiates not to accept pupils until they have been registered as Probationers of the R.I.B.A. Compliance with this request will greatly assist the Council in their efforts to improve the status of the Profession by raising the general level of Architectural Education throughout Great Britain.

Full particulars with regard to registration as Probationer and copies of the application form can be obtained from the Secretary R.I.B.A.

IAN MACALISTER, *Secretary*.

Members' Column

OFFICE ACCOMMODATION WANTED.

A.R.I.B.A. requires light offices, from December quarter, or would consider sharing suite. Westminster or West district. Please state full particulars with inclusive terms.—Box 1011, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

CHANGES OF ADDRESS.

Mr. ERIC L. BIRD (*A.*) has removed his office from 22 Great Russell Street, W.C.1, to No. 11 Great Russell Street, W.C.1. The telephone has been transferred and the number remains unaltered (Museum 3473).

Mr. JOHN HODGES (*A.*) has moved his office to 101 Gt. Russell Street, W.C.1., and will conduct his practice in future from that address.

MESSRS. J. H. BREWERTON & MARSHALL.

Mr. J. H. BREWERTON begs to say that he has taken into partnership with him Mr. Percy Herbert Marshall, who was articled to him, and has been his assistant for some years. The practice will in future be carried on in the name of "J. H. Brewerton & Marshall," of Gervis Chambers, The Square, Bournemouth, and the new firm hopes to merit the kind recommendations of all its friends.

PARTNERSHIP WANTED.

A.R.I.B.A. (35) wishes to get into touch with established architect in Yorkshire or North of England with view to partnership. Could render assistance in own office.—Reply Box 3127, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.C.1.

APPOINTMENTS VACANT.

CHIEF ASSISTANT (single) A.R.I.B.A. required for architect's office in Johannesburg. Must be thoroughly conversant with building construction, and if possible have a knowledge of steel construction. Must also have a thorough knowledge of quantity surveying and should possess a diploma to this effect. Three years' agreement. Salary £500. Part passage paid.—Apply to the Secretary R.I.B.A., 9 Conduit Street, W.1.

YOUNG ARCHITECT required by company in North of England. Must have had experience in the design and construction of electrical sub-stations, and be able to draw up bills of quantities, specifications, etc. Good prospects of permanent employment for a suitable man.—Apply Box 6114, c/o the Secretary R.I.B.A., 9 Conduit Street, London, W.1.

APPOINTMENTS WANTED.

A WELL-EDUCATED young Frenchman, good draughtsman, having had two years' training with a French Government architect, is anxious to obtain a year's training with an English architect in the South of England in order to improve his knowledge of the English language and to become acquainted with English architectural terms. Would be willing to assist with children's French studies and would give his services in exchange for his keep and a little pocket-money.—Further particulars can be obtained on application to the Secretary R.I.B.A., 9 Conduit Street, London, W.1.

A.R.I.B.A. seeks an opening as Assistant with a view to partnership in a well-established practice.—Box 4328, c/o Secretary R.I.B.A., 9 Conduit Street, W. 1.

A.R.I.B.A. renders assistance to architects in their own offices, or in advertiser's. Surveys of all kinds, levelling, working drawings, specifications, etc. Experienced and rapid worker. References given. London district. Box 2410, c/o the Secretary R.I.B.A., 9 Conduit Street, W.1.

Minutes I

At the First General Meeting (Ordinary) of the Session 1924–1925, held on Monday, 3rd November, 1924, at 8.30 p.m., Mr. J. Alfred Gotch, F.S.A., President, in the Chair.

The attendance book was signed by 41 Fellows (including 16 members of the Council), 19 Associates (including 5 members of the Council), 3 Licentiates, 1 Hon. Fellow, 2 Hon. Associates, and a large number of visitors.

The minutes of the meeting held on 2nd June were taken as read and signed as correct.

The Hon. Secretary announced the decease of Mr. Thomas Edward Collcutt (R.F.), Past-President, Royal Gold Medallist, and it was RESOLVED that the regrets of the Royal Institute for his loss be recorded in the minutes, and that a message of sympathy and condolence be conveyed to his relatives.

The following member, attending for the first time since his election, was formally admitted by the President: Mr. L. Gordon Lunan (A).

The Secretary read the names of candidates nominated for election on 1st December, 1924.

The President delivered the Inaugural Address of the Session.

On the motion of the Earl of Crawford and Balcarres, (Hon. Fellow), seconded by Lord Charnwood, a vote of thanks to the President for his Address was passed by acclamation.

The President briefly expressed his acknowledgments.

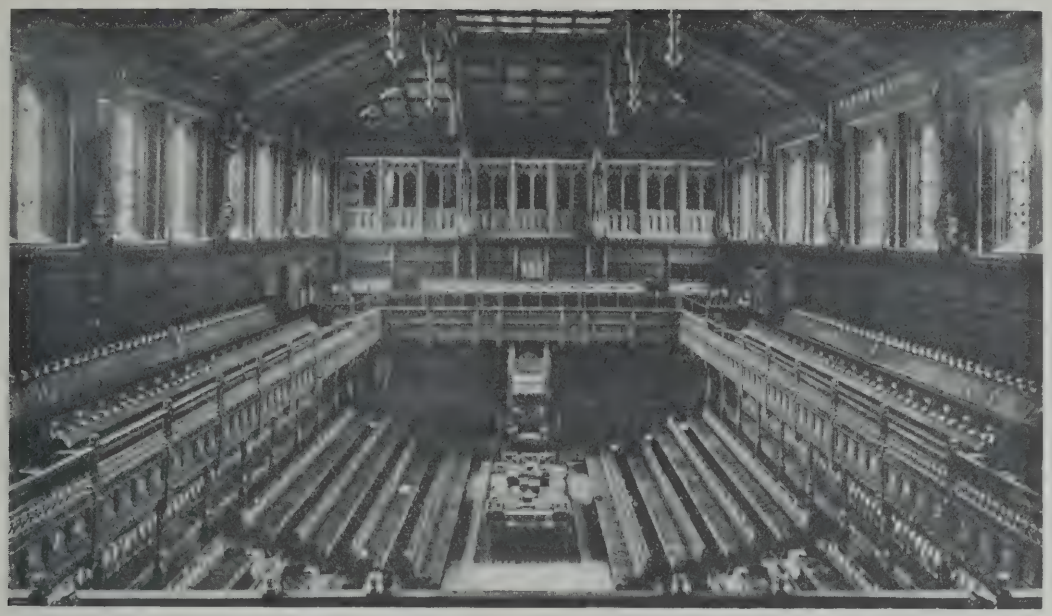
The President presented to Mr. Francis T. Verity (F.) the Bronze Medal and Diploma for the best London Street Frontage completed in the year 1923.

Mr. Verity briefly expressed his thanks.

The meeting closed at 9.35 p.m.

R.I.B.A. JOURNAL.

Dates of Publication.—1924: 8th, 22nd November; 6th, 20th December. 1925: 10th, 24th January; 7th, 21st February; 7th, 21st March; 4th, 25th April; 9th, 23rd May; 13th, 27th June; 18th July; 15th August; 19th September; 17th October.



THE EXISTING HOUSE OF COMMONS

Planning for Good Acoustics

BY HOPE BAGENAL [*A.*]

[*Read before the Royal Institute of British Architects on Monday, 17 November* 1924.]

OUR past president, Mr. Paul Waterhouse, in his address of November, 1922, referred to the problem of acoustics in the following words: "But after all the best buildings for sound seem to be those in which echo is made our friend and not our foe; buildings in which, as in old Exeter Hall, echo was timed to reinforce every syllable instead of fighting for dear life with the succeeding one, or possibly the next word."

I would like in this paper* to carry forward the idea behind his thoughtful words and suggest how to regulate our dealings with *Echo*. There is no reason indeed why that nymph, when given a good home, should answer back as is her habit near woods and on the edge of moist river lawns. Within four walls she can be tamed and instead of striving with her companion can readily be induced to reinforce his words in a well-timed assent. But much depends on the distance she sits from her looking-glass. She will use walls, floor and ceiling if she is permitted and dearly likes a good dome. But the art of the designer lies in confining her glances to certain surfaces.

This can perhaps be made clearer if we define Echo simply as the image of a sound, and her mirror as any hard, smooth, rigid surface occurring anywhere in the building. Let us consider these mirrors in three main types of buildings. I propose to refer only occasionally to the theoretical side. Mr. G. A. Sutherland has dealt very clearly with the elements of the subject in his excellent papers published in the R.I.B.A. JOURNAL in 1923. I want to apply the principles enunciated by him to some historical and modern types :—

* Previous papers laid before the Institute on this subject are as follows :—Roger Smith, T., "On Acoustics," TRANSACTIONS, December, 1860; Statham, H. H., "Architecture Practically Considered in Relation to Music," TRANSACTIONS, 1873, p. 81; Burrows, H. W., "Sound in its Relation to Building," JOURNAL, March 28, 1895.

Open-air Theatres.—The classic theatre has many vital lessons in acoustic planning. The Greek type was a very highly developed acoustic instrument; the Roman was less excellent. The excellence of the Greek theatre was due to three contributing factors :—

(1) The sound was intensified near the source by a number of useful reflections.

(2) The passage from speaker to listener was kept clear and free from obstacles.

(3) The sound had a clear passage from speaker to listener and reached the listener at a wide angle.

In Fig. 1 the Greek and the Roman theatres are compared. The characteristics of the Greek are the high, narrow *logeion* or stage platform (conceded to be ten or twelve feet high at Epidaurus and Priene) ; the skene wall behind this ; and the large paved orchestra area in front of it.* These points are, of course, controversial; but I want here to look at the evidence from the acoustic point of view.

The useful reflections from these surfaces are shown on the Greek section, Fig. 1. The small depth of the stage and, therefore, the nearness of the players to their back wall, ensured its efficiency as a reflector. The height of the stage above the orchestra level gave reflections at a useful angle from the paved area below. There was also the floor of the stage giving reflections less useful.

The height of the stage also gave a wide angle of impact to the direct sound from player to audience. This is especially important when there are no reflections from the ceiling. Sound passing over human heads at a small angle is rapidly absorbed. Therefore, the wider the angle of impact the better. The plan of the classic theatre ensured an equal distribution of sound in all directions, and the section in the case of the Greek theatre was usually without reflecting surfaces likely to cause even local interference. Vitruvius says explicitly in Book V. (3) : " In short, the building should be so contrived that a line drawn from the first to the last step should touch the front angle of the top of all the seats, in which case the voice meets with no impediment."

The information given in Vitruvius, Book V., however obscure in parts, is obviously the result of a long and intelligent tradition in applied acoustics. Even including the obscure parts, his fifth book still remains one of the few textbooks on the subject which cannot be ignored.

Also, since there was no roof to the Greek theatre, the reverberation was nearly as short as in the open air.

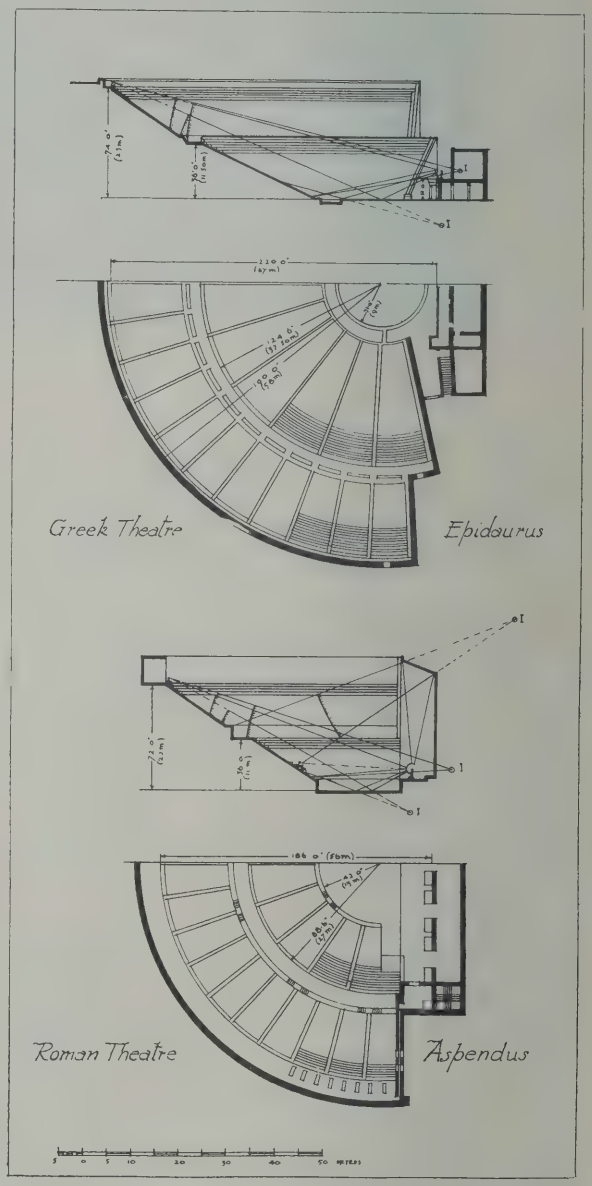


FIG. 1

* Authorities, Durm, J., *Die Baukunst der Griechen*, 1910 edition, section on theatres, p. 454 ; Moritz, E., *Das Antike Theater*, 1910, section on acoustics, p. 35 ; also see Professor E. A. Gardner's summing up of the general evidence in his *Glory of the Greek and Roman Theatre*, " Wonders of the Past " series, part 23, 1923.

Use of Resonators in a Greek Theatre.—But the fact that there was no reverberation meant that the energy condition was low. The size of the classic theatres was enormous, seating as many as sixteen to twenty thousand people. The rear seats were sometimes at a distance of more than two hundred feet from the stage. All possible reinforcements were therefore desirable. A method of reinforcing by resonance was probably secured by the following means. The wood floor of the stage in contact with the feet of the player acted as a resonating surface. In addition to the stage floor were the *pinakes** or wooden panels placed between stone columns in the supporting wall of the stage. Rebates for these are still to be seen. Each wooden panel in this position would undoubtedly reinforce the sound, and specially so if in contact with the floor of the logeion. The declamation of the players was a kind of rhythmical shouting or chanting, and probably required considerable training. The frequent and sonorous vowel sounds of the Greek tongue, produced as musical tones, conveyed the sense to the remotest seats. Stage floor and " pinakes " together formed the sound-box. The players performed not only upon the logeion or stage platform but on the theologeion above and upon the orchestra below. The painting on the wall of the Necropolis at Cyrene shows the three players upon the orchestra floor with chorus round them. They are standing upon low rectangular objects having small square openings. Donaldson† takes these to be the soles of the buskins of the players, the small square being the division between the two. In my opinion they are what they appear to be, namely, rectangular sound-boxes, having openings towards the audience. The players upon the orchestra level would require wood rather than a stone surface to stand upon in order to give the same full tone to their voices which they could command upon the logeion above.

These points in acoustic design have a direct bearing upon modern problems. A hard rear wall some ten feet behind the speaker may make considerable difference to audibility in the case of a large hall or in the case of a pulpit. The usefulness of the stage floor as a reflector is one of the factors which make the difference between the opera house and the concert room. The upper galleries of Covent Garden rely greatly upon the stage floor, and it is well known that the speaking voice can be heard well there. A concert room would be improved by a clear, hard floor space round the singer or solo instrument. It is bad design to bring orchestral instruments or platform seats close up to solo performers. A clear orchestra area (such as was required in the National Theatre competition recently held) immediately in front of the Albert Hall platform would increase the useful sound to galleries.

Wood surfaces could also be used advantageously as resonators. They should be in contact with the singer or instrument. The wood surface of the platform floor should be jointed to the front of the platform which would then act like the Greek pinakes ; and the same principle could be applied to the wood panelling of the platform recess. A powerful singer is really an instrument in contact with the floor. Resonating surfaces increase his power : and they are specially useful for musical instruments like 'cellos and double-basses.

There was one characteristic of the modern auditory lacking in the classic theatre, namely, a certain fullness of musical tone due to reverberation. The lack of this must have been felt as the dimensions of the theatre increased. Two attempts were made to compensate for this. The Greek system of *echeia* was an attempt to place resonators in the form of enclosed volumes of air responding to tones in the neighbourhood of the audience. The fact of these echeia is disputed, and no vases corresponding to those described in the Vth Book of Vitruvius have been actually found. The only evidence which I consider important (outside Vitruvius's writings) is the fact that (1) thirteen compartments corresponding to those allocated by Vitruvius are to be found in the ruins of the theatre at Aizani, and (2) that a tradition of acoustic pottery seems to have continued into the Middle Ages. The place in the mediæval church selected for their use appears to have been the sleeper walls under the choir stalls. They were found in these positions in St. Nicholas,

* *Pinakes.* See Durm (J.), *Die Baukunst der Griechen*, p. 482 : " If we decide to understand under ' pinakes ' thin intercolumniations of wood which could be put in or taken out, or again, if we choose to assume in place of them three-sided revolving prisms (periakti) with decorations painted thereon, this is open to anyone, but nothing is proved thereby. The rebates on the stone supports strengthen the view that panels with fastenings were put in there."

† Donaldson (J. W.), *The Theatre of the Greeks*, p. 285.

Ipswich ; St. Peter's, Mancroft, Norwich ; and St. Peter's Mountergate, Norwich.*

Many other examples exist of pots found in chancel walls, but the three I have named appear to be more probably for acoustic purposes than for any other. Vitruvius in a significant passage says that theatres built of wood do not require the system of echeia.

The second attempt to get a fuller tone is seen in the Roman stage roof.

In the Roman theatre the stage was lower and was brought forward so that the orchestra became a semi-circle. The great width of the classic stage of this shape must have constituted a danger. Echoes would certainly be returned from wing walls. In these walls the periakti may have been placed—a series of prisms, triangular on plan, rotating upon an axis and providing three sets of scenery. If the line of these periakti was placed at an angle of 45 deg. to the stage the actor's voice would be reflected out into the hemicycle. Vitruvius mentions the practice of the singers to the flute turning towards the " scenæ valvas " (some part of stage scenery) in order to project their voices. In the Roman theatre the orchestra space was frequently used for seats. The reflecting surface thus sacrificed was partly compensated for by the extra floor area of the stage. But an important addition occurs in the Roman theatre from an acoustic point of view, namely, the roof set at an angle above the stage. Yet the reflections from this roof would not have given the " consonance " recommended by Vitruvius. At Aspendus the sound beam from the roof would have descended upon the seats (see the Roman section in Fig. 1), after an excess of 35m., or, roughly, 114 ft. It is possible, however, that the considerable prolonging of tones and vowels which must have resulted from this was deliberate, and an effort to compensate for the deadness of open-air conditions. The need for a roof began to be felt.

The lesson of the classic theatre remains, however. It is this : that reflecting plus resonating surfaces *near the source of sound* will work wonders.

Churches.—The mediæval church was the antithesis, in acoustics, of the Greek theatre. The enclosing masonry walls and vault acted as bright mirrors to all sounds. The congregation occupied only a fraction of the enclosing surfaces. The priests, like the classic players, chanted or intoned their words, but for a very different reason. The inter-reflections from all surfaces caused what is known as *reverberation*. The term in Italian or French refers to *light* as well as to sound and means *dazzle*. It means a high energy condition for all sounds produced within the building. Whereas the Greek theatre was an instrument low and distinct, the mediæval church was loud and incoherent. It also reinforced certain tones rather than others for a reason I cannot enter into here. The result was that intoning was rendered inevitable by the duration of each syllable. Also the intoning on a *certain note*, or in a certain tonality, reinforced by the church, was likewise rendered necessary. These acoustic conditions produced their own characteristic results in choral music and in intoned liturgy. The speaking voice from the pulpit never was and never can be easy under such conditions. In music the elaborate polyphony of the Palestrina Mass, with its inweaving of melody, its crescendoes and diminuendoes, was possible. The staccato and other tempo effects of what is termed " classical " music are impossible where there is a reverberation of five or ten seconds. The Gothic revival restored to us the cruciform plan and lofty vault and abolished church galleries. But the sermon was not abolished at the same time, and, since the mediæval form became orthodox for all denominations, there has been considerable conflict between the pulpit requirements and the intoning conditions. In modern church design a compromise is necessary. It is possible to preach slowly with a reverberation of three seconds, yet this very slowness is often a matter of complaint by popular preachers. It is difficult to apostrophize or denounce clearly where there is a long reverberation.† On the other hand, the choral Eucharist sounds well. The compromise is best effected by placing the pulpit with a back wall behind it and a reflector above at an angle of 45 deg. and extending, if possible, some feet over the pulpit, and by treating walls and vault with an absorbent plaster.

The best Anglican auditory is the City Church.

* *Norfolk Archæology*, Vol. VII, 1872, p. 93.

† In the Middle Ages excommunications were pronounced from the pulpit, also homilies read and parish notices given out. Yet all these could be read slowly, not spoken. The sermon was neglected for various reasons for long periods. It is recorded that no sermon was preached at Rome by a bishop for five hundred years after the fifth century. (Palmer's *English Ritual*.)

Wren must have thought a great deal about acoustics. He gets to the heart of the matter when he says :

" The Churches therefore must be large ; but still, in our reformed Religion, it should seem vain to make a Parish-church larger, than that all who are present can both hear and see. The Romanists, indeed, may build larger Churches, it is enough if they hear the Murmur of the Mass, and see the Elevation of the Host, but ours are to be fitted for Auditories . . . to build more room than that every Person may conveniently hear and see, is to create Noise and Confusion."—(Letter on the City Churches.)

The lesson of the mediæval church is that a long reverberation is necessary for the finest choral (unaccompanied) music, but that requirements for choral music and for the speaking voice are *mutually conflicting*.

Special Church Forms.—In churches where the reading and speaking voice are emerging as the dominant factors it is wrong to preserve the mediæval form. The Christian Science church requires good audibility for the reading voice delivered from two parallel reading desks. Also an important requirement is good hearing from every seat in the body of the church for the speaking voice at the Testimony services. Good reflecting surfaces near the source of sound should be designed, the principles holding exactly as in the Greek theatre. For the speaking voice on the floor of the church a special reflector should be used in the shape of a flat ceiling normal to every seat and capable of reflecting sound from any one seat to all others. Unless reverberation is cut down the tendency for the reading voice will be to intone which is not desirable, and the tendency for the speaking voice to be hopelessly indistinct. Since the services rely upon these factors, and not in any sense upon a liturgy or choral music, ordinary parish church conditions are not suitable for a Christian Science church. The reverberation requires to be below two seconds. The ceiling should not be higher than 35 ft. above the heads of the congregation. The main reflectors should be hard, side walls and rear walls behind the audience should be rendered absorbing. The same conditions apply in the case of Friends' Meeting Houses and other places of worship where the speaking voice is the main factor and in which any seat in the congregation may become a source of sound.

Concert Rooms.—A reverberation of two or three seconds at least is necessary for full tone in choral music. Generally speaking, choral music sounds well in a church of moderate dimensions and sounds less well in a packed concert room. Orchestral music requires at least two seconds' reverberation, and a good concert room should provide at least this. A certain brightness of tone can be secured by other means, but that quality which is best described as "full" can *only*, in my opinion, be secured by reverberation. Now reverberation varies directly with volume—that is to say, the larger the room the longer the reverberation ; and inversely with the absorbing power of the room—that is to say, the greater the absorption the shorter the reverberation. The greatest absorbent in any auditory is the audience, and the absorption necessary to insure a two seconds reverberation is frequently provided for by the relatively large audience common to concert rooms and opera houses. Consider a concert room seating two thousand. A rough preliminary calculation will show that such an audience will provide $2{,}000 \times 4.7$ (Sabine's coefficient of absorption per person is 4.7) = 9,400 units of absorption. In order to secure a reverberation of two seconds this requires a minimum air volume of 376,000 cu. ft. But other factors, such as carpets and drapery, etc., will also contribute slightly to the total absorption. This means that for good musical effects the figure 376,000 cu. ft. is on the small side for an audience of 2,000.

Another point to consider in the design of concert rooms is the fact that a large air volume seems to demand a certain reverberation from the musical point of view, and where it is not forthcoming complaints come invariably from executants on the platform. A sense of deadness and absence of power is the symptom. Professor F. R. Watson* has tabulated the acoustic data of auditories which have been pronounced good by public opinion. The results for concert halls show that the time of a satisfactory reverberation increases with the size of the auditory. For instance :

New England Conservatory of Music. Volume 8,000 cu. ft. Reverberation ($\frac{1}{3}$ audience) $1\frac{1}{4}$ secs.

* Watson, F. R., *Acoustics of Buildings*, 1923, p. 30.

Kilburn Hall, N.Y. Volume 101,000 cu. ft. Reverberation ($\frac{1}{3}$ audience) $2\frac{1}{4}$ secs.

Leipzig Gewandhaus. Volume 407,000 cu. ft. Reverberation ($\frac{1}{3}$ audience) $2\frac{3}{4}$ secs.

New Concert Room, Boston. Volume 634,000 cu. ft. Reverberation ($\frac{1}{3}$ audience) 3 secs.

This means that in designing a concert room it is necessary to get a right relationship between air volume and reverberation if the concert room is to be an instrument to the sound as well as an auditory. This is important to bear in mind in practical cases where the cube has to be cut down owing to price. Where choral music is a prime requirement an air volume corresponding to Professor Watson's table should be insisted upon. Where, however, the room has to be used not only as a concert room but as a large assembly room for the speaking voice the problem can be tackled in a different way. The volume can be reduced, but to compensate for the lack of tone wood resonating surfaces must be introduced near the source of sound. If it is found that the reverberation is considerably less than two seconds, dissatisfaction both in regard to tone and loudness of instrument and of voice is sure to be felt unless a policy of resonance is carried out. The typical example is Covent Garden Theatre, where the speaking voice is distinct owing to a reverberation which is short in comparison to the volume, but where the tone of musical instruments is bright. There is a great deal of wood panelling in Covent Garden (the effect of wood panelling on instruments is roughly to absorb sound in the lower rather than in the upper register and thereby to increase the relative power of over-tones). The lesson of the Greek stage floor and of the pinakes should be applied. The floor of a platform or orchestra pit having a six-inch air space below it will reinforce the notes of average pitch for instruments in contact with the floor. The six-inch air space can be provided by wooden floor joists six inches deep resting upon concrete. The joists should run towards the proscenium and the air spaces between should communicate with the air in the auditory by means of suitable openings. The point of a six-inch air space rather than a larger one is that this depth will give a more even reinforcement over the whole scale.

Since the audience supplies 90 per cent. of the absorption it is obvious that the musical effect will be different at rehearsals to the final performance. This is a serious problem and frequently complained about by conductors. The remedy is a thick curtain to be lowered behind the conductor, closing in the orchestra platform and shutting out the auditory. At Amsterdam, in the Concert Gebouw, a thick curtain descends from the ceiling and drops to the front edge of the platform. A curtain of this kind should be provided in the original design of a concert room. It should be made to slide back and be completely screened when a full audience is present, or intermediately to draw out or back according to the number of the audience. Adjustable absorbing material arranged in this way is also desirable for chamber music where instruments as different in tone as the flute and the bass voice are to be heard. The quality of instruments can be considerably amplified by the absorbing or non-absorbing of over-tones by means of thick absorbents.

In plan I recommend, without any hesitation, for large concert rooms the fan shape, with a part of the splay to right and left of platform turned over to form a deep proscenium arch. In this way useful reflectors are formed near the source of sound. An added advantage of the fan-shaped plan in the case of the concert room is that the width of the orchestra space is restricted and too great a discrepancy between the arrival of sounds from different instruments is avoided. Yet even with the fan shape the best seats for musically minded people will be not the front but some thirty or forty feet away, where there will be a proper assembling of sounds upon the ear. Frequently the worst seats in the house are those upon the extreme left or right of the front rows, where the whole effect is astigmatic. A small concentrated orchestra will give a finer musical effect than a large dispersed one, yet the tendency of the time is towards large orchestras and large choirs. The seating for the choir at the Queen's Hall is too small. Provision should be made nowadays for a choir of five hundred and an orchestra of one hundred.

The position of the organ is controversial. If placed at the back of a deep platform recess it is liable to confuse the choir and to be inaudible in a crowded concert room. Organ builders are able to cram an organ into any small area, and will do so if they are ordered by the architect; but the practice is a bad one. My opinion is that the

keyboard should be a movable player upon the orchestra stage or located near the conductor. The late Mr. H. H. Statham, in his excellent article called " Building for Music " (*Architects' Journal*, 10 August 1910), says : " Having kept the summit of the chorus seats as low as can be, all the mechanism of the organ bellows, wind-chest, etc., should be sunk behind the chorus. The sound board upon which the feet of the pipes rest should not be higher than the top level of the chorus seats, and may be some distance below it to allow for their height. They will be heard just as well." If there is no keyboard recess this means that the sixteen feet of height necessary for the pipes can leave an air space above for the sound to get out. The rear wall of the organ chamber can be tilted forward and plastered with sirapite or Keen's, and if the ceiling of the whole platform recess is splayed and similarly plastered the whole recess will then act as a powerful source of sound.

Having provided a large area of resonant wood surface, and having directed the bulk of the sound out upon the audience, it remains to prevent reflection back from rear walls behind the audience. This can be done by a frieze of acoustic felt or of slag wool, in either case screened by canvas.

The English Legislative Chamber.—In England we have developed a type of auditory as characteristic in its way as either the Greek theatre or the mediæval church, namely, the national committee room or " House of Commons." Like the other two main types it has in course of time produced its own style of utterance, and it illustrates better than the others one important aspect of acoustic design. I shall lay before you briefly the stages of development of the type of auditory which contributed definitely to Burke's speeches on American affairs and to the oratorical styles of Macaulay, Gladstone and Asquith.

Its basic principle is debate ; and debate has requirements very different to the requirements of stage plays or intoned liturgy. The finest and most characteristic English oratory I take to be those passages where a Member of Parliament is in the middle of a dialectical combat, the method of which is strictly defined by tradition, and in which he picks his way through a close argument as with drawn sword and the sharp eyes of enemies upon him. The performance is one of reason informed by passion, but we are listening first to an argument of facts and figures and an argument which must be clearly *heard*, for it may be a matter of life or death to a Government to answer it immediately. This quality of rapid debate distinguishes English oratory from the Continental.

Now the nature of this kind of oratory is bound up with the building in which it took place. It was necessarily a small building. Burke spoke in St. Stephen's Chapel, which was, as fitted up for the House of Commons, some 60 by 32 feet, or less, in area, and only 26 feet 6 inches high. Also he spoke from where he stood when he had jumped to his feet. He had not made a formal journey to a tribune centrally placed. But he had half his audience behind his back. In this tiny chamber —a college chapel in character—our liberties were forged by the implement of speech.

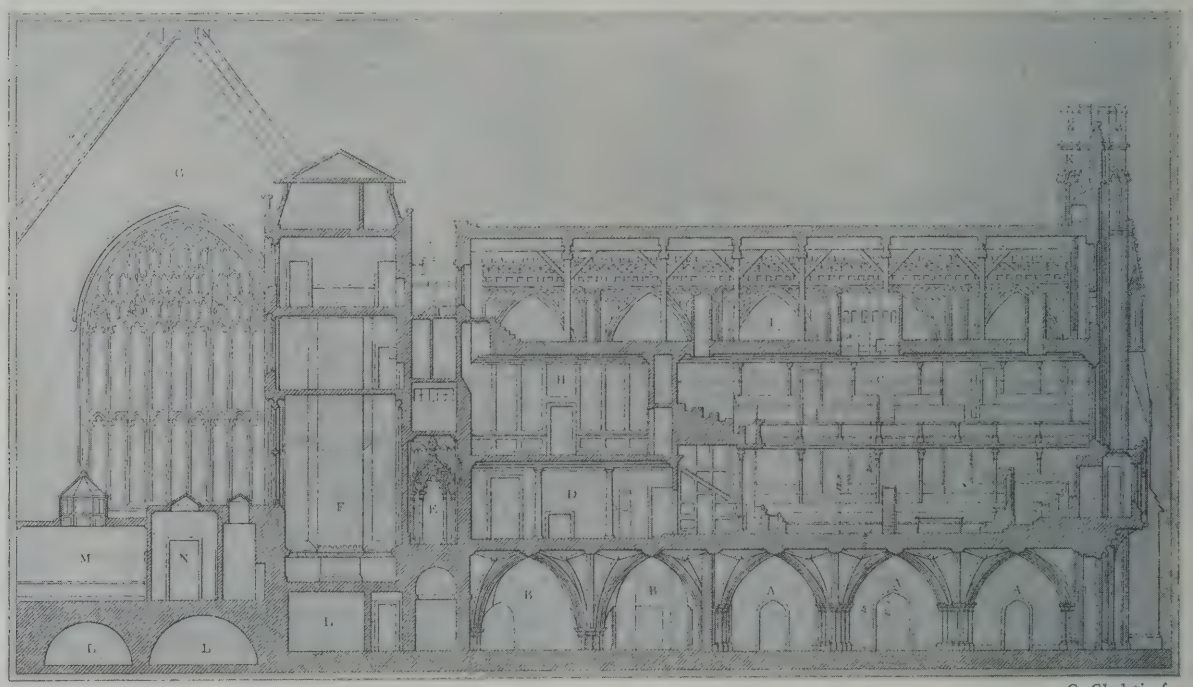
The St. Stephen's Chamber admitted an extra 45 members from Scotland after the Act of Union of 1705, but apparently it was not until the year 1800, when a hundred Irish members had to be accommodated, that plans for a new chamber were called for by a Select Committee in 1831. Soane, Savage, Decimus Burton, Blore and others submitted schemes. But after the fire of 1834 all these schemes were forgotten. The old Painted Chamber was fitted up for the Lords and the old Court of Requests, previously occupied by the Lords, was prepared for the Commons. Both these buildings were gutted by the fire, and the first temporary fitting seems to have been carried out by Sir Robert Smirke. Now this Chamber in the old Court of Requests was larger than the Chamber in the St. Stephen's Chapel. It was 80 feet by 38 feet, and in the engraved view given by Brayley and Britton in 1836* it looks some 40 feet in height. This would have meant a longer reverberation, and acoustic complaints must have occurred, for alterations were undertaken. The view of the interior of the House of Commons, published in 1841 in a volume called *London Interiors*, shows what appears to be the same room lined with wood and with a low ceiling of a special shape. This is known as " the temporary House," and became famous for its good acoustic qualities. The lowness of the ceiling was apparently due to the ideas of Dr. Reid, the ventilation expert, in whose opinion " the cubic content to be filled by the voice should be as small as was consistent with the necessary accommodation. For

* Brayley and Britton, *The Palace of Westminster.*

that reason he had the ceiling of the temporary House made very low so that there should be not much space to be filled." (Evidence before the Select Committee, 1868.)

Since St. Stephen's Chapel had a chamber beneath it it was apparently necessary also that all succeeding Houses should have the same. The chamber beneath the temporary House was made to communicate with the Chamber above by means of holes drilled in the wooden floor. This arrangement was used by Dr. Reid for ventilating. The accustomed to the lowness of the temporary House immediately concluded that it was the height of the present building which was at fault. It was imperatively ordered that the ceiling should be lowered, and the only way in which this could be done was by the introduction of an inner ceiling with sloping sides cutting the side windows in half and ruining the proportion of the room."

The conclusions of members, however, were quite right. What was at stake was that facility for rapid



R. W. Billings del. *G. Gladwin fec.*

SECTION OF ST. STEPHEN'S CHAPEL AND CRYPT
As fitted up for the House of Commons, 1834

fame of the House for good acoustics reached Jenny Lind, who on a visit to England insisted on visiting it and singing a song within it.

In this view we first see the ceiling which might be described as the House of Commons type. It occurs in three designs for the chamber. The acoustic excellence of this room, *thus transformed* (long remembered by members), undoubtedly caused the adverse criticism that immediately occurred when the Parliament assembled in 1848 in Sir Charles Barry's new House. Sir Charles Barry's biographer says: "It was conceived that there was difficulty in hearing, and members debate which cannot exist with a long reverberation. Now reverberation (other factors being equal) varies directly with volume, and volume with height of ceiling. In 1850 a new ceiling, similar in shape to Smirke's (though the effect of the shape was probably not understood), was inserted, and the result was a great improvement. Barry's House of Lords maintains its original ceiling. Tradition says that the House of Commons, before the new ceiling was inserted, was worse than the House of Lords. After the alteration to the Commons all were agreed, and are still agreed, that the Commons is good, whereas the Lords is bad.

Sir Henry Lucy,* describing the House of Lords, says : " Of the coroneted host there are not more than twenty who can make themselves distinctly heard even within the limits of the red leather benches. In the Press Gallery debate may be reported by a system of collaboration. Groups of reporters writing out their notes sit together, each contributing his quota of fragments reaching his ear." It is interesting to note that Queen Victoria could always adapt her voice to suit this chamber and that the speech from the throne was audible in every part of the House. But the speech from the throne is read and not spoken.

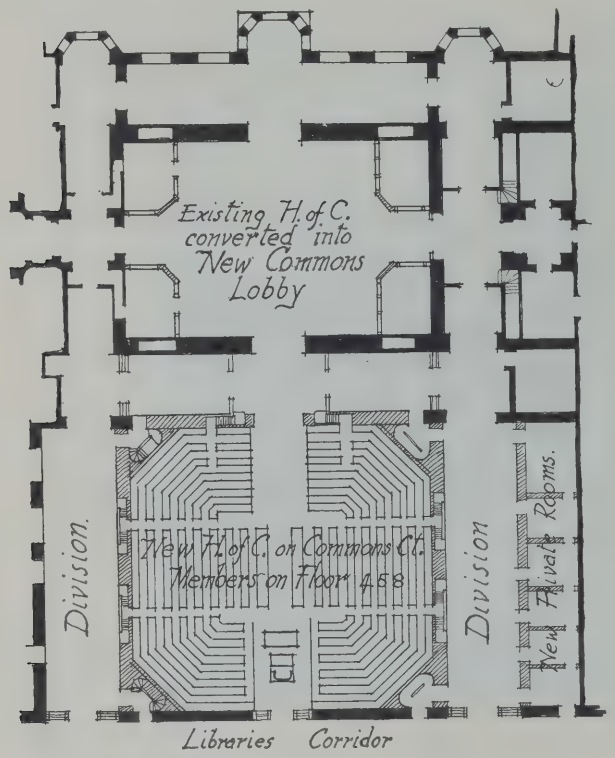
T. H. Shepherd *H. Melville*

TEMPORARY HOUSE OF COMMONS, 1840

In the Commons the old habit of rapid debate at conversational pitch was rendered easy by the new ceiling. Complaints, however, arose and still arise from members in the back benches for the following reasons. The English legislative chamber is not only an auditory, but also a machine of business. Its excellence in this respect was found on analysis (Select Committee House of Commons Arrangements, 1868) to consist in the fact that Ministers in charge of Bills are near the Speaker (or the Chairman of Committee), and near the Press Gallery. A great deal of the business of the House is done in a voice of conversational pitch across the table, and Ministers addressing the Chair can be well heard by the Press gallery immediately above the Chair. The importance of the Press is obvious. Nowadays it really represents the largest part of the audience, namely, the general public, and its acoustic requirements should be placed second after members. But in addressing the Chair from front benches, a speaker has a large part of his audience behind his back. In the English system the speaker is the only permanent audience, and any member's seat may become a source of sound—unlike the Continental system, where every speaker must come to a tribune. Hence the periodical demands in modern history to have the table, and the Ministers with it, moved down the floor to a more central position. By this means also the Treasury and Front Opposition benches could be increased from the now inadequate sixteen seats to twenty-two or twenty-four. The effect of the splayed ceiling is to con-

* *Lords and Commons*, 1921, p. 64.

centrate sound on front benches, and since the important business of the House is carried on there, this is an advantage; but it does not help members in the back benches. The reflected beams of sound from the splayed portions of the ceiling are shown in Fig. 2 concentrating on the front benches and missing the back seats and the galleries. The beam from the centre level portion covers only the seats *in front* of a speaker. Seats behind front bench speakers are, therefore, ill provided. This ceiling



E. M. Barry's Plan for a New House

is constructed of wood and of glass, and is, therefore, not as efficient a reflector as if it were of hard plaster. If this were the case, and if the slopes of the ceiling were adjusted, the room could be made nearly perfect. The total volume of the room is only 127,000 cubic ft., which is very considerably less than the French Chamber of Deputies, 277,000 cubic ft., the Washington House of Representatives, 409,000 cubic feet, or the London County Hall, 237,000 cubic feet. The advantage of restricting the volume had already been impressed upon a previous generation by Dr. Reid, and it is referred to as an important point in the evidence before the Select Committee of 1868. The blue book containing the evidence and report of this Committee is an important

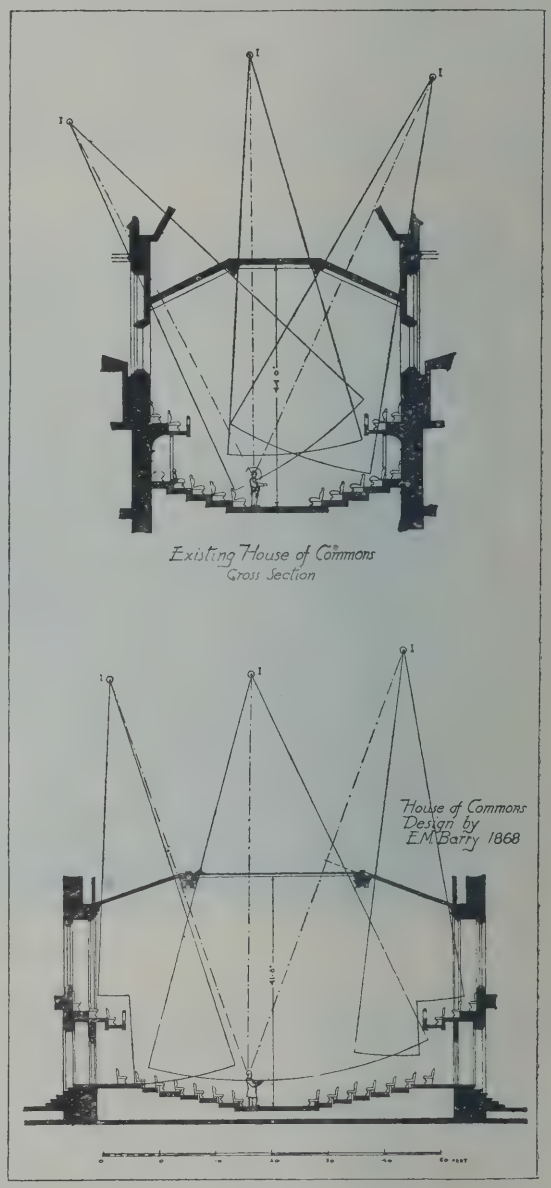


Fig. 2

original document on acoustics. Professor Tyndall gave evidence and specially emphasised the value of a low ceiling. He says: "In order for the echo to be of any possible advantage, it must follow so hotly upon the direct utterance that

one shall be practically superimposed upon the other. Otherwise . . . the echo is so related to the sound itself as to destroy the definition of its boundaries. I admit that you get more noise, but you get less distinctness and definition, and definition, I think, is one of the most important points in speaking." Professor Tyndall added: " I cannot help thinking that draperies have a very

The House of Lords

great influence in quenching the reflected sound, and thus destroying the after sound." In these paragraphs, reported in 1868, the Sabine theory of reverberation is obviously foreshadowed. The upholstery in the House of Commons, of course, contributes much by absorption to the shortness of reverberation. There was considerable discussion before the Select Committee (1868) as to whether the air volume of the ventilating chamber under the floor should be taken as part of the air volume of the House. With our modern knowledge, it is obvious that the perforated floor, covered as it is at present with carpet, acts simply as a very powerful absorbent. Another factor, probably active, is resonance from the wood panelling. Thus by thorough British methods of trial and error a very interesting and effective acoustic instrument has been evolved.

E. M. Barry, son of Sir Charles, designed a new House of Commons at the request of the Select Committee of 1868. The evidence of that Committee was not lost upon him. He preserved the shape of the ceiling and actually lowered its height. The action of the splay in E. M. Barry's design is more valuable than in the existing House. It provides useful beams of sound from front benches to seats in their rear (see Fig. 2). If at any time the House of Commons is to be re-built, this excellent design should be carefully studied.

The lesson of the House of Commons is that a right acoustic tradition for buildings of this kind exists in England and should be followed. It is a useful tradition, both for hearing well and for doing business. It is the opposite of the " Church " tradition, previously discussed, on which our Law Courts and many of our places of business were designed.

Behaviour of Ceilings.—In Fig. 3 seven common types of ceiling are shown in cross-section, including the House of Commons type. (The rooms are 60 ft. wide and the maximum ceiling height 40 ft. above the speaker's head.) The reflections from each are plotted for various positions of a speaker S, showing the amount of useful sound distributed by each upon the floor. Where there are curves their centres are shown marked C, and the position of these centres plays an important part in the efficiency of the ceiling. The positions of listeners at floor and gallery levels are also shown. Fig. 3 (1) is the flat ceiling showing an equal distribution of sound over the floor no matter what the position of the speaker. Fig. 3 (2) is a barrel vault with centre C some ten feet above the speaker's head. The crown of the barrel transmits sound usefully upon the floor after it has passed through a focal area. The effective ceiling area is represented by the arc D E which causes the

wave front G K. Sounds striking the lower portions of the barrel transmit wave fronts represented by the arc K M which strike the side walls and vault opposite and are in their turn reflected back as the wave front N O. This means that barrel vaults cause inter-reflections and therefore make for reverberation, while only the crown reflects usefully upon the floor. Barrel vaults therefore are often useful where choral music and a long reverberation are required. They are invariably bad for the speaking voice.

In Fig. 3 (3) a segmental ceiling is shown with the centre of the curve at the level of the speaker.

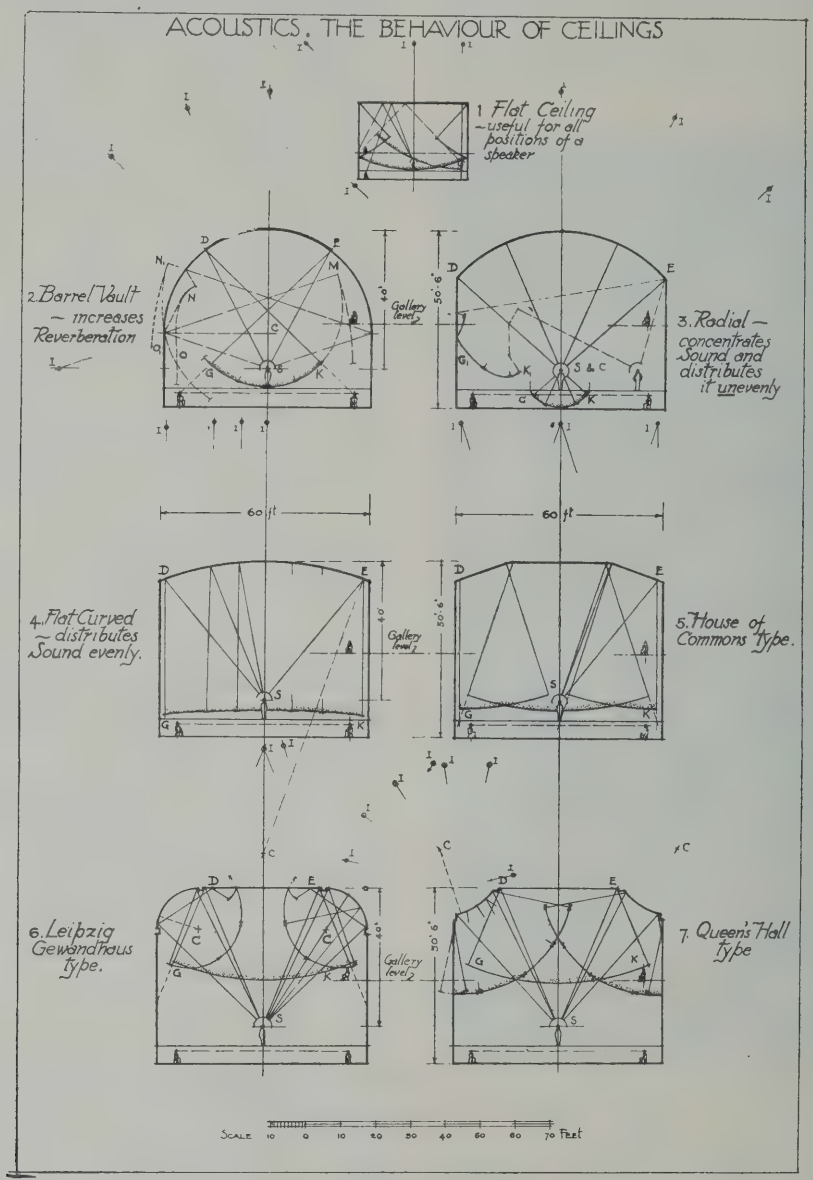

ACOUSTICS. THE BEHAVIOUR OF CEILINGS
1. Flat Ceiling – useful for all positions of a speaker
2. Barrel Vault – increases Reverberation
3. Radial – concentrates Sound and distributes it unevenly
4. Flat Curved – distributes Sound evenly.
5. House of Commons type.
6. Leipzig Gewandhaus type.
7. Queen's Hall type
Gallery level
60 ft
Scale 10 0 10 20 30 40 50 60 70 Feet

Fig. 3

S and C take up the same position. This form concentrates sound along the centre of the hall and is bad for any purpose whatever. If the speaker moves to S, the beam is concentrated opposite him as shown. The gallery level gets

no sound. At least four cases I have recently had owe their trouble, or the aggravation of their trouble, to a ceiling of this kind. A ceiling should distribute sound evenly over the greatest area of seats,and if it concentrates sound in certain localities it will necessarily weaken it in others. In this case—Fig. 3 (3)—the great arc of the ceiling D E concentrates sound on the little arc G K. Therefore the sound is intense in the centre of the hall and along a corresponding line on plan.

In Fig. 3 (4) a segmental ceiling having a centre C 33 ft. below floor level is shown. Here the curve of the ceiling sends down a beam of sound evenly distributed over the whole cross-section. This form is safe and useful for all purposes where a platform position is used. The radius of the curve should not be less in relation to the height of the room than is shown here. The flatter the curve the more even the distribution.

Fig. 3 (5) is the House of Commons ceiling slightly adjusted. It has the advantages of the flat curve 3 (4). But both these types have this disadvantage: that if a speaker moves near the wall the beam is given a direction towards the opposite side and does not cover seats on the near side.

Fig. 3 (6) and Fig. 3 (7) show a flat ceiling having respectively concave and convex coves, as in the case of the Leipzig Gewandhaus and the Queen's Hall. Both are useful when a platform position is used, and the extremities of the ceiling are therefore useless for reflecting. In the case of a concave cove the sound touching it, after passing through a focus, is widely diffused and thus rendered harmless ; in the case of the convex cove it is directly diffused and by the shape of the curve can be given either a very wide diffusion or, as in this case, a diffusion just sufficient to be of use to the galleries.

Modern Parliament Chambers.—In the designing of modern parliament chambers, the problem is to provide a plan semi-circular or semi-octagonal in shape to meet modern states of opinion, and yet still able to dispense with a tribune position for the speaker. The advantage of a tribune is twofold : Firstly, a speaker has all his audience in front of him, and, therefore, useful reflecting surfaces can be designed to his right and left ; and secondly, a single direction is given to his voice to which he becomes accustomed. The large Continental Parliament houses, all of great height, are indeed acoustically workable mainly because a central tribune position is used. Since without a tribune front bench speakers have a large number of listeners at their back, the ceiling should always be used as a reflector normal to every seat in the house, Fig. 4—that is to say, flat, and not more than 35 ft. in height. A semi-circular or semi-octagonal plan can be made to supply also reflecting surfaces along the diameter behind the chairman.

The requirements of the Press should also receive special attention, and the smooth working of the Press in connection with the House of Commons should be borne in mind. It is not sufficient nowadays to allot one of the distant galleries to reporters. Since every member's seat in a British assembly can become a source of sound, and since reporters cannot move about to advantageous positions, they should be located on the floor of the House in a mean position for good hearing and with a door of their own giving access to the lobbies. A reporter who wants to ask a question of the member after a speech should be able to dissociate himself rapidly from the writing tables without making too great a noise or disturbing his colleagues. Public galleries should form part of the main cell of the chamber as in the House of Commons and should not be placed in a deep recess. Where recesses are used they should be wide and shallow and without a screen of columns.

Above all, it is necessary to design for the reverberation. As a rule in a legislative chamber the number of persons present is always relatively small in proportion to the air volume of the building. A large council chamber, for instance, may have a frequent attendance of a hundred persons only, whereas a theatre of the same volume would seat a thousand nightly, or ten times. This means that large areas of permanent absorbing material must be provided in suitable positions in order to compensate for the lack of audience and reduce the reverberation to a figure suitable to the speaking voice.

What are the sound-absorbing materials suitable for modern buildings and likely to be approved by architects ?

Absorbing Materials.—We have seen that there exists a valuable British tradition in one class of auditory, namely, that for debate. But the

important evidence placed before the 1868 Commission remained undeveloped except for E. M. Barry's design for a new chamber. Until the recent experiments carried out under the B.R.B. of the Department of Scientific and Industrial Research the American coefficients of absorption were all that the architect had to go upon if he should desire to embody the House of Commons

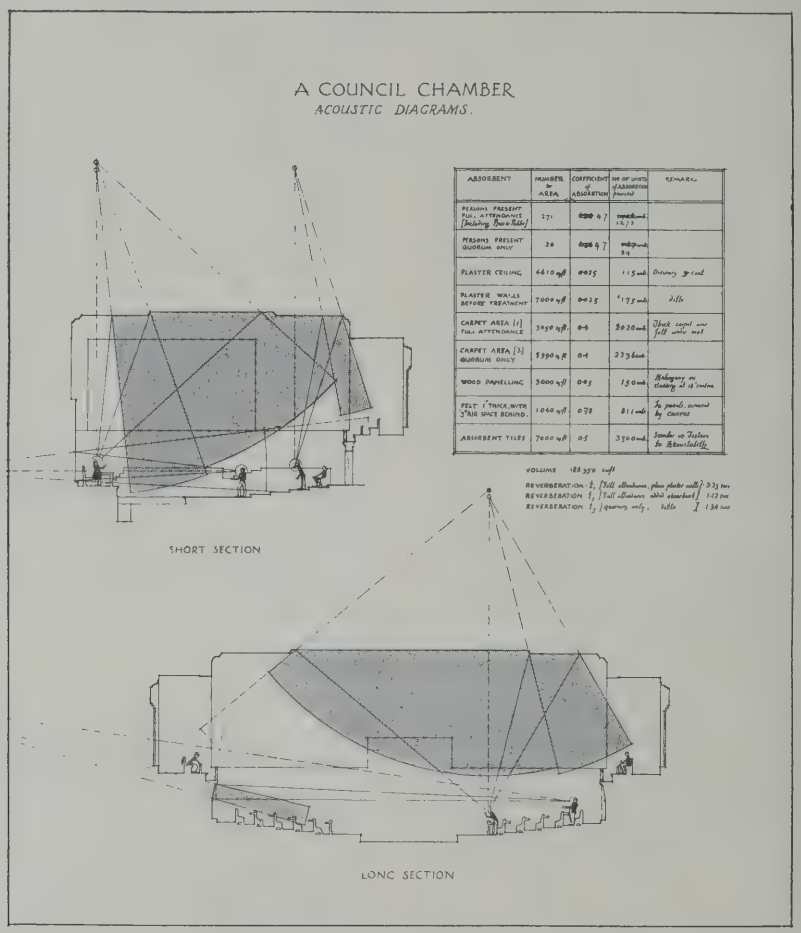


FIG. 4

tradition in a building and to do his work with some precision.

The requirements for a good absorbing material are: 1. Cleanliness. 2. Durability.—The absorbents available for architects at present fall into two classes. First the soft materials requiring a canvas screen, and secondly the plasters and tiles. Although I yield to none in my admiration of the American results, it must be clear to architects that direct experiment upon English materials and fittings is most important. American methods are not the same as ours, and all kinds of factors connected with building practice enter into the problem. The results of the Building Research Board experiments upon British materials *fixed exactly as an architect would have them fixed*, have already been most valuable. These experiments were undertaken at the request of the Indian Government, on the suggestion of Mr. Herbert Baker, on account of the work at Delhi. The experiments were carried out by Mr. P. W. Barnett, A.R.I.B.A., assisted by Mr. W. H. Glanville, B.Sc., and other members of the staff of the Building Research Station, under the direction at first of Mr. H. O. Weller, M.I.C.E., Hon. A.R.I.B.A. (late Director of Building Research), and now of

Dr. R. E. Stradling, M.C., Ph.D., the new Director. A room was found and treated in order that it might give in its initial state a very long reverberation. Into this room the materials to be tested were brought and their effect on the reverberation was noted. The first result was that an architect could enter the test chamber and hear for himself the result on the energy condition of the room of introducing the material suggested. The experiments were necessarily empirical, since a comprehensive investigation was not possible in the time available, but very great care was taken in calibrating the room and in taking readings. The tests were made to cover the musical scale at octave intervals. Some of the many results obtained can be stated briefly as follows :—

The most powerful absorbent of all (for pitch C_4) which an architect can use is slag wool behind wire netting. The efficiency of this absorbent declines rapidly above C_5—that is for higher notes.

The next most efficient absorbent for C_4 is Cabot quilt. This material is easy to apply and is hygienic and not harmful to the touch like slag wool. It is slightly resonant. (The brown paper envelope and the enclosed volume of air probably cause this resonance.) It improves the speaking voice conditions, but will not give the best results for chamber music owing to unequal reinforcing of tones. It was fixed in two layers on 2 in. by $1\frac{1}{2}$ in. battens, 2 ft. 8 in apart, and had thus a $1\frac{1}{2}$ in. air space behind it.

The next most efficient absorbent is 1 in. hair felt. Felt is a material used very widely in America and was found at Harlesden to make, in conjunction with wood, the best conditions for chamber music. But if felt is to be widely used in England it must be made really moth-proof and fire-proof. The felt was also fixed on 2 in. by $1\frac{1}{2}$ in. battens.

All these three materials require canvas screening. Of the wall panellings cork 1 in. thick framed in wood with an air space behind gives fairly high absorption for C_4.

Celotex board was found to be an efficient absorbent and to give excellent results for chamber music.

Of the permanent flooring materials rubber carpet $\frac{3}{16}$ in. thick was found to be the most efficient.

Owing to the courtesy of Professor Paul Sabine of the Geneva Laboratory, Illinois, experiments were undertaken upon an acoustic plaster using his recipe as a basis. These experiments produced interesting and useful results and are still in progress. An acoustic plaster was developed causing for C_4 at least 20 per cent. reduction in the reverberation of the room. (This figure must not be taken to represent a Sabine coefficient.) A surprising result of the experiments in this class was the efficiency of coke breeze blocks 2 in. thick. It is shown by the experiments that coke breeze slabs having a finishing coat of acoustic plaster would make a very efficient absorber. In designing a building like a modern church or council chamber, where the audience factor is small compared to the volume, and where a short reverberation is essential, it may be necessary to cover all the wall area above a certain level with an absorbent plaster. In such a case an absorbent of this kind would be most useful.

In addition to the experiments by the B.R.B. some interesting experiments have been carried out by Major Tucker of the Signals Experimental Establishment, Woolwich, upon various samples of acoustic plaster supplied by the Building Research Station. Experiments on Sound Transmission and on analysing by means of the ripple tank are also in progress at the National Physical Laboratory. The physicists are now interested in our problems, and it is for the architects to place their conundrums before them. Formative research will come in response only to a real demand formulated by architects. We spend our lives in experiencing the shapes and materials of buildings, and we are the first to hear acoustic complaints. If we listen in buildings as well as look at them we can make valuable acoustic observations, we can keep records of results, and if we are in touch with the physicists we can suggest the lines of research by which we ourselves are to be the first to benefit.

The Discussion on Mr. Bagenal's Paper will be published in the next issue of the Journal.

The Mosque "El Aksa," Jerusalem

BY WILLIAM HARVEY.

The Institute Library has received from Colonel Ronald Storrs, the Governor of Jerusalem, three drawings of the domed portion of the mosque El Aksa, Jerusalem, made by Prof. A. Kemaledin and his staff preparatory to the repair of the structure.

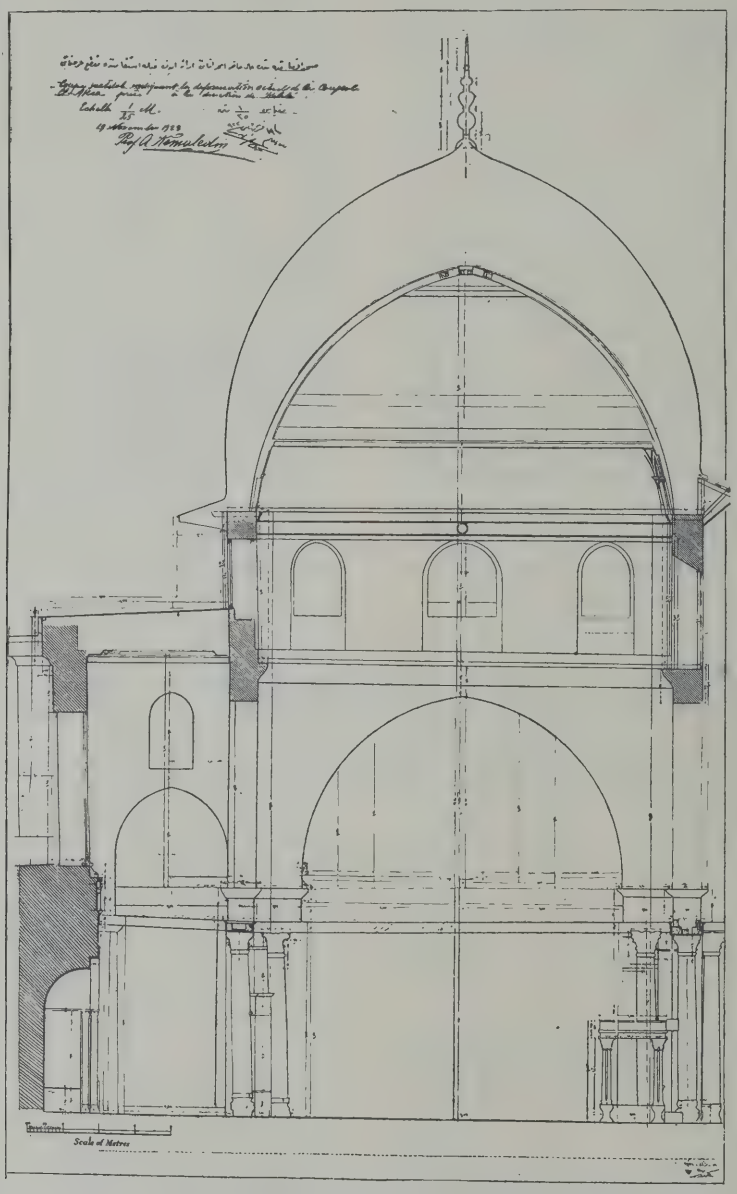


FIG. 1. AKSA MOSQUE, JERUSALEM. Part of Longitudinal Section through Kibla, looking west.

The works of conservation are being undertaken by the Supreme Moslem Council of Palestine under the advice of their consulting architect, Mr. Ernest Richmond [*F.*], whose book on the decoration and inscriptions of the buildings in the Haram-ash-Sharif will be published this autumn. The proposed works will include treatment of the timbers of the domes against the attacks of anobiid beetles and necessary structural repairs.

Professor A. Kemaledin is well known as the Chief Architect to the Ministry of Awkaf at Constantinople, and now that he has been appointed Chief Architect to the Supreme Moslem Council of Palestine, with

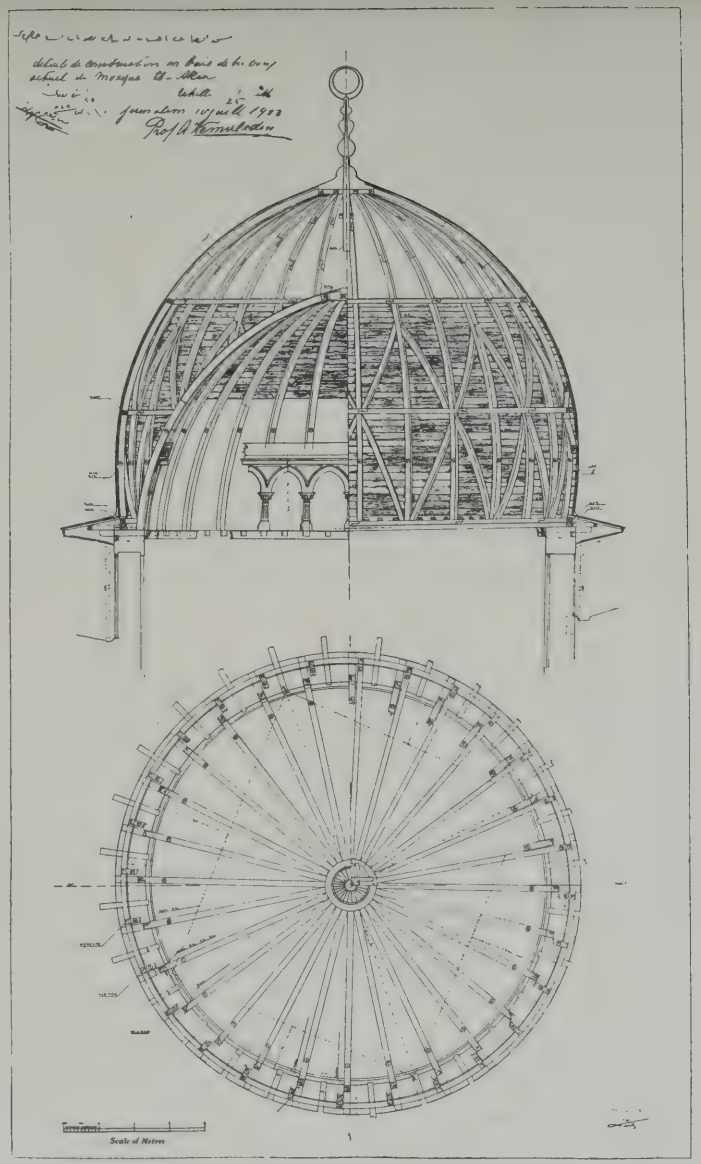


FIG. 2. AKSA MOSQUE, JERUSALEM
Detail of Construction of Timber Domes

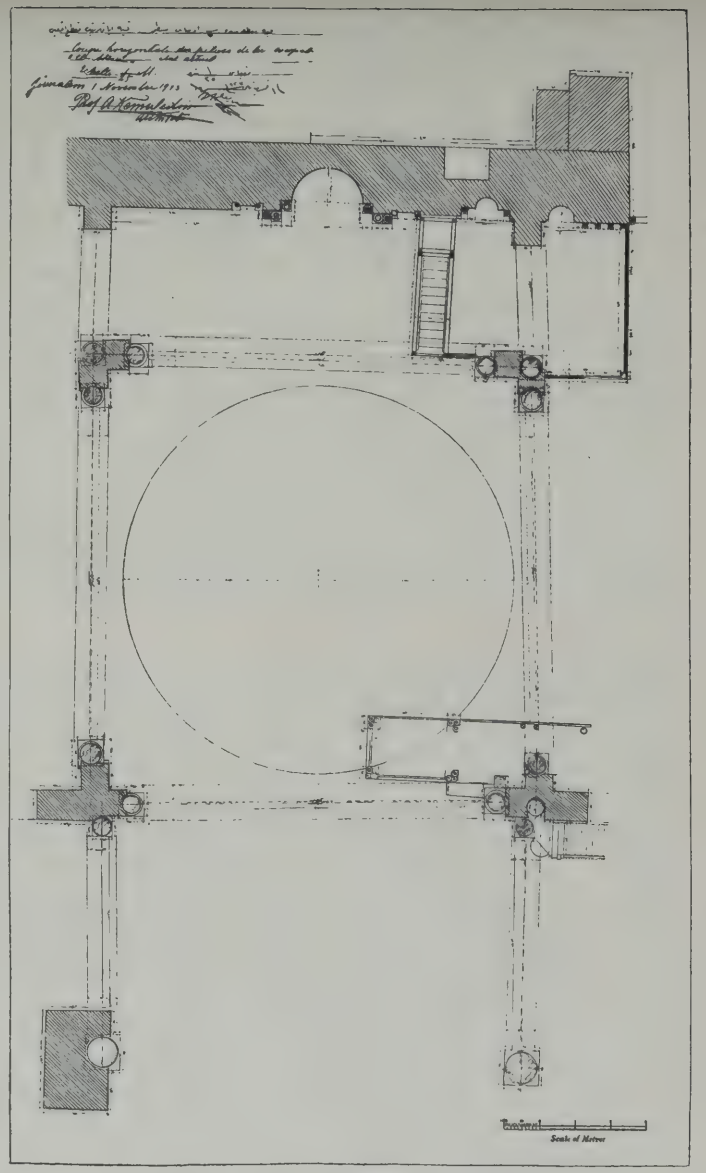


FIG. 3. AKSA MOSQUE, JERUSALEM
Plan of Domed Portion and Kibla

control over the Dome of the Rock and the Aksa mosque, these exquisite buildings are at last safe in competent hands.

Some years ago the necessary repairs were executed in the most haphazard fashion. In 1909, when I was studying colour decoration in the Haram-ash-Sharif, the roofs were visited at intervals by a plumber who worked single-handed, suspending himself on a plank slung on a rope tied around the stem of the gilded crescent finials of the domes. The man was reputed to be insane—poor plumber !—and exempt, therefore, from the objection taken to men in full possession of their senses climbing to high points overlooking the private houses and flat roofs of a Moslem city. It was only with the greatest difficulty that I—not being similarly qualified—obtained permission to ascend with him to his aery station.

The domes of both the Aksa mosque and the Dome of the Rock are formed in two separate shells of curved timbers. The outer shell is covered in each case with sheets of lead and the inner one decorated internally with modelled painted and gilded plaster (not mosaic, as was stated in a recently published work on Muhammadan Architecture). The use of two absolutely independent shells one surrounding the other without any cross-bracing or propping apart is characteristic of the trust in surface continuity of structure that differentiates Saracenic architecture from the articulated rib and panel method of construction adopted in Europe. The separation of the outer and inner domes is also a wise provision to protect the delicate decoration of the interior from vibrations received by the outer domes, which are exposed to severe storms of wind and hail on one of the highest parts of the Judean Plateau, 2,440 ft. above the Mediterranean (Figs. 1 and 2).

Another expression of the value of connectedness in architecture is to be seen in the system of anchor beams crossing the spans of the four arches bearing the pendentives and drum of the Aksa dome. Anchor beams had been used in Byzantine works, but the extreme lightness of support permitted at the Aksa mosque by the consistent exploitation of this method of restraining arch thrusts is probably unrivalled in works of the period (Fig. 3). The original building may even have had still more attenuated supports than are seen at present, for the masonry piers introduced between the marble monolith columns are probably afterthoughts inserted to strengthen the building after one of the historical earthquakes to which it is known to have been subjected. The exact date of the construction is still the subject of discussion.

Founded by Abd-al-Malik on the ruins of Justinian's church of St. Mary, it probably contains material from this building, but reconstruction by Saladin in 1187 probably accounts for the principal features of the design.

The proportions of the domed portion shown in the drawings seem to have been based upon multiples and simple fractions of the column heights. The chief intercolumniation, or rather the spacing of columns centre to centre, is practically twice their average height, and this abnormal width of span emphasises the great value of anchorages in maintaining equilibrium. The direct tie of the anchor-beam receives some assistance from the corbelling out of the springing of the arches and the consequent reduction of the span by the quarter of a column length. The drawings are figured in metres in Arabic numerals, the arch span shown on section reading 8·87 metres and the clear space between column bases 9·53 metres. The height of column from ground to top of capital is 5·14 metres.

The drawings are probably among the first accurately dimensioned records of the building to reach this country, though Mr. Ernest Richmond brought home some careful plans and sections of it in 1919.

Similar methods of dome construction in the Dome of the Rock appear in my measured drawing of that building made in 1909 and published in the R.I.B.A. JOURNAL of 17 June 1921.

Anchorages across the spans of the arches and the use of antique marble shafts as supports are features of both these neighbouring buildings; but whereas the arches of the Dome of the Rock are of point-rounded type, the pointed arch is used in the Aksa Mosque.

Mediterranean Civilisation*

BY C. R. ASHBEE, M.A. [*F.*].

Mr. Luke's *Anatolica* is a book that all who have been out East, or who love architecture, should read. It whets the humanist in one. It makes one long for more, whether it be architecture, poetry, love of landscape and the sea, or whatever else connotes civilisation ; his illustrations are delightful, and his map, by that clever artist Joan Kingsford, a joy. The book, which begins with a charming apologue concerning a shrewd old Moselm calligraphist, is divided into four main sections dealing respectively with Greece and Thrace, Cyprus, Syria and Jerusalem, and last Transcaucasia. Each of the four is a brief study of his subject—Anatolica. And how may we render the word. It is deceptive. Things about Anatolia ? No ; rather is it a series of essays on Mediterranean civilisation as we are gradually getting to understand it. Crete, Egypt, Athens, Alexandria, Rome, Byzantium, Venice, in the inner circle ; Spain, France, England, in the outer circle, have all contributed or been a part of it. Mr. Luke touches everything with a nice erudition, an appreciation for folk lore, a singular sympathy for all religious forms, and, above all, the personal experience of an administrator. Those who, like myself, have had the privilege of working with him know how valuable is this mastery of detail. In all that has to do with the Greek Church, indeed, he may be said to be a specialist ; and the Greek Church means a great deal more than its architecture or its religious observances.

As a result of the War we English appear to be engaged now in repeating the hopeless effort of the ages to determine the boundaries of western civilisation, boundaries that pass from north to south, somewhere east of Anatolia in a vague and wavy line, somewhere from the north of Georgia to somewhere in the south of Ma'an. All to the immediate west of thelinet hat bounds this wonderland is Mr. Luke's special province. There are few men, probably no English administrators, who know so much about it as he, or how the line, if it be possible to draw it, might be drawn, or what are the ways and customs, the religions and languages of the people that dwell about it. One rubs one's eyes and asks, " Is that why a far-seeing administration, ever mindful to put the right man in the right place, has sent him to Sierra Leone ? " But I forget myself. This is not a political but a technical publication.

So I would draw special attention to Mr. Luke's description of early Christian architecture, how that architecture is interlocked with Oriental forms, and what in architectural history they stand for as an expression of civilisation. Also I would point to his sympathetic descriptions of Moslem work, though I think he might have made some reference to the bibliography of Mr. Creswell and his now conclusive datings, with which he is, of course, familiar. His accounts of Turkish work, and what is left of it, especially in the Old Seraglio in Constantinople, are most timely. We have all too little idea of what we are losing, and how beautiful, particularly in woodwork, colour, calligraphy, and faience, much of it is. We owe a great deal more to the Turks than we have of recent years given them credit for. Whether from indifference or from good taste, they were preservers rather than destroyers ; and I once heard William Morris say, in quiet protest against the hysterical " bag and baggage " preaching of Gladstone, that had it not been for the Turk the world would have lost Saint Sophia in Constantinople. The Turk, at least, had a sense of reverence and tolerance, an æsthetic sense ; and all he did was to hang over its mosaics a few painted *Qoranic* texts—those texts of which Mr. Luke so pleasantly tells us.

One of the charms of *Anatolica* is that its writer appreciates the responsibilities of the modern western administrator ; we industrial berserkers, who are, often without our knowing it, making such havoc of an ancient order. The picture he draws, as those who have been out there can testify, is that of a dying civilisation in the process of being repainted, or coated in the veneer of another civilisation, whether dying or not we are ourselves uncertain. The interest is that, as a result of the contact between the two, we are experiencing the uncertainty. This, however, is sure, that it is only by a combination of the finer qualities in both that the new can be established. The perpetual protest against the drab uniformity we bring is patent to all. Ours is the smutch of black and khaki upon the beauty of the Orient. I was once at a reception of the Egyptian Sultana, in Alexandria, and that also is Mr. Luke's Anatolica. The *Suras* of the Prophet were superbly chanted by *Immans* in Egyptian silks, the coffee was handed round in *zarfs* of gold, everything was lovely, but as a concession to western proprieties, the chief eunuch, who ordered the ceremony—he was over seven feet high and doubtless chosen on that account—was dressed in a long black frock coat so that he looked like a misfitted shopwalker out of an "emporium." One felt that the liability was limited, but the power for expansiveness and dark destruction infinite. We still carry with us wherever we go this curse of colourlessness ; and perhaps the more we learn of the vanishing beauty of the Orient the better we shall understand what it is we bring, for good or evil.

Mr. Luke's heart, it is evident, is in Cyprus, where, indeed, some of his best work has been done, and where

* *Anatolica*. By C. H. Luke, Assistant Governor of Jerusalem. (Macmillan and Co. 1924.)

many of his friends who have drunk the Comanderia with him hope he may some day be again. His charming words on the isle of Aphrodite make one wish he had threaded a little more of the golden strand of Hellas through his chapters, for was not the Byzantine Church the end of the great dream of Hellas—the turning within of a civilisation complete in itself? It was the last creative effort of the Greek spirit, when it realised its failure to master, by absorbing it, the endless onrush of barbarism; and the happy humanist in Mr. Luke makes him well aware that the fight is till going on, and that the best English administrators are usually those who have in them the ever living light of Hellas. So in his *Anatolica* the author has made, without, I think, being quite conscious of what he has done, a substantial contribution to a subject we are only just beginning to understand—the history of Mediterranean civilisation. Where so much has been given perhaps it is ungracious to ask for more, but there are some things which in his book we miss.

We should, for instance, have liked more about Venice and that shameless overthrow of the Greek Empire that had so much to do with the coming of the Turk later into Europe; we should like to have had more about Norman work in Sicily, and the link between Sicily and Cyprus; we should like to have had more about St. Francis and the Franciscan spirit, for was St. Francis not a part of Anatolica when he went off to convert the Sultan Al Kamil? we should have liked a little more as to the part that France played in the Near East, of de Joinville, who described it more exquisitely than any man has ever done; and why not something of St. Louis himself, his building work in Syria, his dealings with Al Moadam and Octai, all that is a part of Anatolica; and, above all, why not something of our own Edward Plantagenet, for it was he, the first English king, who saw that, as a result of the disaster of St. Louis and the fall of Bagdad, the Crusades had come to an end? From that moment, when Edward I. returned to Sicily, when modern England and modern France were born, when the West and the East lost touch, Europe turned in upon herself and that nationalising began which culminated in the Great War. And all this is written in the architecture. Our current generalisations, and all the nomenclature of the schools are out of date in the light of our modern knowledge of Mediterranean civilisation and the relation of East and West. Some day, if Mr. Luke adds another chapter to his book, will he not give us one on the beginnings of militant Christianity in the Near East, when after the fall of the Western Empire, the second great civilising effort of the West began, when the Byzantine and Persian cultures met; and we get all those curious and interesting forms, the early Georgian buildings, the fortified monasteries, etc., of which he tells us, a development that also was checked by the catastrophe of the fall of Bagdad, where the traditions of Græco-Roman civilisation had been carried on until the suppression of the Motazilites? All this is Anatolica, that "Museum of the races," as Mr. Luke calls it, or in an even happier phrase "that inextricable confusion of Christianity and Islam with a top dressing of modern thought, and substantial foundation of paganism."

It is to be hoped that Mr. Luke's book will run into many editions, but if he reissues we would urge him to add either a short key chapter that shall give the salient points of Mediterranean history, or, better still, give us a table of dates where the historical outlines, the personalities, and the architecture he records may be set side by side. We should enjoy his book ever so much more if he did not so strain our imagination and so test our ignorance.

Correspondence

HOUSING.

21 *Suffolk Street, S.W.*1.
18 *November* 1924.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—From the time when the Addison fiasco was first mooted I have openly expressed my conviction that no solution of the housing problem is possible which does not embrace:

1. The protection and extensive employment of unorganised, untutored and unfettered labour.
2. The suspension of legislation inimical to the natural development of building enterprise.

Although this conviction seems to be shared by a great majority of those with whom I have discussed it, I understand that it is not held by some eminent architects whose views have undoubtedly influenced the abortive housing policies of three successive Governments.

To a community lacking bread, a scarcity of skilled bakers would not appear to be an adequate reason for starvation, nor would expert efforts to refine its diet afford any comfort to its members.

That a sufficiency of houses can be built to our standards without wounding the susceptibilities of organised labour is questionable, but that insistent pursuit of this ideal is obstructing the building of houses in which men and women could live in comfort, health and decency is unquestionable.

In a matter of such national importance it is right that the considered opinions of even a small minority of architects should be represented and carefully weighed by those responsible for any measures taken in this cause, and with this object I invite any members of the profession who may share my views to communicate with me at this address.

Yours faithfully,

JAMES RANSOME [*F.*].

The Late Sir Thomas G. Jackson, Bart., R.A., Royal Gold Medallist R.I.B.A.

BY SIR REGINALD BLOMFIELD, R.A.

The death of Sir Thomas Graham Jackson leaves a gap not easily to be filled in the ranks of the architects of this country. In the memoir given in *The Times* he was very properly described as a great English architect; and he was great, not only by his skill as an architect and his literary ability, but also by reason of the fact that throughout a long and successful career he never failed of his own high ideal as an English gentleman. The history of art shows that these qualities do not always go together; there have been artists of outstanding ability who have stained their record by unscrupulousness in practice. Jackson was not one of these. Rather imperious by nature, and perhaps by training and traditions inclined to be autocratic, he never failed in courtesy and consideration for others; and I recollect, many years ago, a friend of mine, of distinguished ability, who differed from him *toto cælo* in his views of architecture, saying that in spite of this he considered Graham Jackson an ornament to the profession.

Since those days when Shaw and Jackson were the recognised leaders of all who regarded architecture as an Art and as something more than a profession, the point of view seems to have shifted, and not entirely for the better. The architect and scholar is somewhat at a discount. In our Schools the study of the great work of the past, which after all must be the basis and starting point of all real movement forward, has been neglected in favour of contemporary fashions of design. It was not so in the days of men whom we shall yet regard as great architects when the latest vagaries of our Schools are forgotten; men such as Decimus Burton, Inwood, Cockerell, or Charles Barry. These men went through years of apprenticeship and study of old work before they considered themselves qualified to design. Nowadays a rush to the Continent or to America is considered adequate, with the results that are seen in the design of most of the commercial buildings of the present day. Against such futility Jackson made a resolute stand. He studied old work persistently and with genuine affection. Owing to his early training in a "Neo-Gothic" office, he never quite shook himself free of the sketch-book habit of design, design, that is, mainly preoccupied with details. And indeed he always seemed to me to have rather misconceived the meaning of Renaissance architecture, regarding the work of the ornamentalists as architecture, when he should have ignored those ingenious tradesmen, and concentrated his attention on the real architects, Bramante, Peruzzi, Michael Angelo, Vignola, Palladio, and their followers in France and England.

But from first to last architecture was always to him the Art of arts. He devoted his literary ability and untiring industry to the study of its history. His admirable work on Dalmatian Architecture is a classic, and in the closing years of his life he undertook, and had gone far to complete, an account of Western architecture, from the fall of Rome right down to the eighteenth century. His work as an architect is familiar to all of us, and more particularly to Oxford men. When I was an undergraduate at Oxford forty-five years ago the Schools were building, and much of his work in the Colleges was completed. Even we undergraduates felt that he had caught the spirit of seventeenth-century Oxford as no other man could have done, for in fact Graham Jackson was steeped in the best Oxford tradition, that fine tradition of Humanism which is beyond all price, and was never so badly needed as it is to-day. A fine architect and a fine character, all architects will mourn his loss.

NEW BUILDINGS AND OTHER WORK BY SIR THOMAS JACKSON.

Oxford.—*Colleges:* Balliol, new fellow's house (King's Mound); Brasenose, new buildings; Christ Church; Corpus, new house; Hertford, chapel, bridge over New College Lane and other new buildings (still in progress); Lincoln College; Merton College; Oriel College; Queen's College; Trinity, new buildings; Wadham College.

The new Eaxmination Schools; Ackland Home; boys' high school; girls' high school; Radcliffe Library; electrical laboratory; cricket pavilion. Also restorations and other work at All Saints' Church, Bodleian Library, Carfax Tower, Clarendon Press, Frewin Hall, St. Mary's Church, Sheldonian Theatre, Radcliffe Observatory, Radcliffe Infirmary, Radcliffe Camera.

Schools: Radley (chapel, dining hall, memorial gateway and other buildings); Giggleswick (chapel); Brighton College (new buildings and enlargement of the chapel); Eton (cricket pavilion, racquet courts, science schools, music school, Lawson Museum); Westminster; Harrow (master's house); Rugby (new Speech Room); Uppingham (new buildings); Cranbrook; and Sandwich.

New Buildings at Cambridge.—Sedgwick Museum, Law Library, Law School, Archæological Museum, Physiological Museum, Psychological Museum.

New Churches.—Annesley Church; Hornblotton Church; Curdridge Church; Narbeth Church; Northington Church; Stratton Church; Wimbledon, St. John's; Wimbledon, St. Luke's; Norfolk Island.

Hospital for Children with Hip Disease, Sevenoaks; Wimbledon Hospital; Barnet Library.

Restorations and Additions at the following.—Aldershot Church; All Saints, Stamford; Ashbourne

Church; Ash Church, Sevenoaks; Sevenoaks Parish Church; Bath Abbey (new cloisters, still in progress); Canterbury Cathedral (monument to Archbishop Benson); Duddington Church, Northants; Farnham Castle Chapel; Grimsby Church; Hereford Cathedral; Hampstead Church; Malvern Priory; Mold Church; Portsmouth Parish Church; Ripon Cathedral; St. Cross Hospital, Winchester; St. Michael's and St. Peter's Churches at Bournemouth; Hagley Church; Laverstoke Church; Worcester Cathedral; Stapleford Church, Notts; Wimbledon Parish Church; Whitchurch, Hants; Wrexham Church; Christ Church Priory; Winchester Cathedral.

Also at Durham Castle; Danby Hall, Yorkshire; Laverstoke House, Longleat; Eltham Palace; Montacute House; Catton Hall; Royal Academy; Greenwich Hospital; Drapers' Hall; Inner Temple; Rushton Hall; Rothamsted; Nottingham Castle, etc. Also the Campanile at Zara.

Review

REPORT OF THE BIRMINGHAM CIVIC SOCIETY. *June* 1923–*June* 1924. *Price* 1*s.* 6*d.*

It is perhaps not so strange as it may superficially appear that Birmingham, which has had for the last couple of generations a highly developed sense of civic responsibility and an active and well organised municipality, should, nevertheless, be one of the dreariest and most chaotic of the large towns in England. The reason is—if a generalisation upon so big a subject be permitted—because the value of beauty and order in daily life has not been appreciated by those who restricted their efforts to the realms of morality and ethics. Birmingham epitomised the Victorian virtues. Rich and affluent citizens were acutely aware of their responsibilities and ungrudgingly gave of their time and money to the fulfilment of them. But the achievement of beauty in everyday life was, until recently, not one of them. The formation of a civic society was the first public recognition of a changed outlook, and the subsequent growth and extension of that society's activities is a good sign that such recognition is welcomed and appreciated.

Foremost among the Society's successful achievements must be reckoned the formation of the Advisory Art Committee. The Society alone was not responsible for this, but its efforts were the most important factor in the establishment of the Committee, which is now officially recognised by all the various committees of the City Council. This, however, is an earlier success with which the present report does not deal. During the year ending June 1924 the most important work of the Society was its campaign in support of the Repertory Theatre. In November 1923 it was announced that the Repertory Theatre would be obliged to close in the following February owing to insufficient support. The Society at once took the matter up, organising a powerful committee representative of every interest in the City, and entered into a vigorous publicity campaign. At the time when the report went to press it was uncertain whether the Society's efforts had been successful. There is no longer any doubt, since at the time of writing a season is in full swing and a very serious loss to the intellectual and æsthetic life of the City has been averted.

The Society's work during the past year includes the planning of various park lay-outs, but one of its activities is of more than local importance. During the previous year the Society was engaged in an attempt to improve the appearance of public telephone kiosks. The matter was subsequently brought before the Director of Telephones by Mr. William Haywood, the Society's indefatigable honorary secretary, with the result that various models are now to be erected outside the National Gallery for comparison. This is surely a matter of some importance, for the amenity of our towns depends in no little degree upon the appearance of street appurtenances, pillar boxes, lamp standards, telephone kiosks, underground stations, public conveniences, public vehicles and the like. Untidiness, even more than bad architecture, is responsible for the ugliness of our towns. Along these lines there is much scope for a Civic Society, especially since such a process of tidying up does not necessitate a great expenditure. But perhaps most important of all is the ridding of the town of smoke and fog. We have only to travel abroad to know that this can be done. If Birmingham, through its Civic Society, would show England the way, its fame would surely be established for all time.

H. J. Birnstingl [*A.*].

THE ARCHITECTURE CLUB.

Annual General Meeting.

The second Annual General Meeting of the Architecture Club was held on 18 November, 1924, in the Meeting Room of the R.I.B.A. by kind permission of the Council.

Mr. J. C. Squire, who occupied the chair, gave an account of the Club's work during the last twelve months, and outlined the scope of its immediate activities in the future. Mr. Squire said that the principal activity for the past year had been holding the Spring Exhibition at Grosvenor House, kindly lent by the Duke of Westminster. Although the Exhibition was itself successful by reason of the fine collection of architectural works shown, it was a disappointment from the point of view of attendance; the total number of visitors being half that of the 1923 Exhibition. This was due in a large part to the unsettled conditions attending a change of Government, followed by a traffic strike which commenced a few days after the opening. The result was a serious financial loss to the Club.

The Chairman made particular reference to the fine speech of the Marquis Curzon of Kedleston, who opened the Exhibition, and to the visit of Her Majesty the Queen, accompanied by her brother, the Marquis of Cambridge, who is a member of the Club.

The Chairman enumerated other activities during the year, including the fact that the British Empire Exhibition authorities approached the Architecture Club with a request for their assistance in organizing a representative exhibition of British Architecture in collaboration with the Royal Institute in May. The Club also co-operated with the Institute in the matter of St. Paul's Bridge, and took an active part in the organized protest that was made by the leading artistic bodies of London. The Chairman referred to the fact that these activities with the Institute showed the happy relations which had existed between that body and the Architecture Club.

In the matter of City churches, the assistance of influential persons in opposing the scheme for removing certain of Wren's churches was obtained, and it was a cause of great gratification to feel that they, with others, had been instrumental in stopping the scheme of demolition which was under consideration.

The Club appointed a Press Sub-Committee under the Chairmanship of Mr. James Bone. Through this Committee efforts have been directed towards obtaining proper mention of the architects' names in any press reference to architecture. They have obtained information on all matters relating to new buildings, which is placed at the disposal of editors of daily papers.

The Sub-Committee is at present busy on important propaganda work on the question of the control of advertisements on buildings.

The Exhibition Sub-Committee has been fully engaged in the organization of the exhibitions at Grosvenor House and at Wembley, previously referred to. They have decided that it would not be desirable to hold another exhibition next spring, but are at present considering the question of one in the autumn of 1925.

A Club visit was held during the year to the Bush Building, when the architect, Mr. Harvey Corbett, kindly conducted a large number of members over his work.

The Club has held three dinners during the year, at the first of which Mr. Curtis Green was the Guest of Honour, on the occasion of his election to the Royal Academy. At the second dinner Mr. Paul Waterhouse was entertained on the termination of his Presidency of the Royal Institute. At the third dinner the toast "Architecture" was proposed by the late Prime Minister in a remarkable speech, and was replied to by the President of the Institute, Mr. J. A. Gotch.

The Chairman also referred to the steadily growing membership of the Club, which has now reached a total of 271 out of a full complement of 300 permitted by the Rules. He referred to the loss by death of two well-known members, Mr. J. Annan Bryce and Mr. A. Clutton Brock. The Chairman, having thanked retiring members of the Committee and the Hon. Treasurer for their work, said that during the period under review there had been a marked increase in the interest shown in architecture, and a greater measure of accuracy and intelligence in criticism by the lay Press and the public. This was largely due to the propaganda work of the Club, which had fully justified its existence.

The Report and Balance Sheet, having been proposed by Mr. Howard Robertson and Mr. P. D. Hepworth, were adopted unanimously.

The meeting then proceeded to the election of new members of the Committee and an Honorary Treasurer for the ensuing year, and after some discussion on matters of general policy the meeting terminated with a cordial vote of thanks to the Chairman, and to the Secretary, Mr. Elder Duncan.

H. Austen Hall [*F.*].

SOME ENGLISH CATHEDRALS AND STONE DECAY.

Lecture delivered by Professor A. P. Laurie to the Students of the Royal Academy, London, on Wednesday, 19 November 1924.

Professor Laurie began by stating that for some years he had been making observations at the request of the Office of Works on the stone decay taking place in our ancient monuments. During this time he had collected a good deal of interesting information, and during the last summer he determined to visit some of our cathedrals with a view to collecting further facts.

The cathedrals visited were Durham, Lincoln, Ely, and Norwich, and in addition he re-examined the condition of the stone at Hampton Court and the Houses of Parliament, and paid a visit to Westminster Abbey.

Before speaking of these buildings he began by referring to the ruins of Elgin Cathedral. In order to understand what is happening here and elsewhere it is necessary to classify the stones used for building into three main groups: Lime-stones, sand-stones in which the quartz particles are united by calcite, and sand-stones in which the particles are united by silica. This classification would be regarded by petrologists as wanting in detail and being somewhat diagrammatic in character, but it will be most convenient for the present purpose, which is the injury caused to modern buildings by the presence of sulphur dioxide in the air produced by the burning of coal. The ordinary causes of stone decay do not require special mention as they are well known to architects and builders, but the new and the main cause of the rapid decay which takes place in modern buildings is the attack on the calcium carbonate of the lime-stone and of the calcite forming the binding material in sand-stones by sulphur dioxide in presence of air and moisture forming calcium sulphate. Calcium sulphate is slightly soluble in water, and therefore is being slowly dissolved in the rain and removed, but this is not the most serious cause of damage. Cases of rapid decay are found to be associated with the crystallisation of calcium sulphate inside the stone and the consequent breaking up of the stone. The lecturer showed micro-photographs of calcium sulphate crystals and magnesium sulphate crystals from Ely and from the Houses of Parliament respectively, and described experiments for producing the same effect in the laboratory.

Proceeding then to deal in detail with the stone decay taking place at Elgin, Durham, Lincoln and Ely, he directed attention to the fact that in some cases where siliceous sand-stones had been used the source of lime must have been the mortar, the rain dissolving and washing the lime into the stone. He also showed from analyses at places like Ely and Tintern Abbey that the destruction due to sulphur dioxide was not confined to towns, but was spread over remote country districts.

Finally he stated as the result of the evidence collected that probably the best thing that could be done would be to treat such stone surfaces with a binding material depositing silica cement, and periodically to wash down the building with water during the summer with a view to removing the excess of sulphate of lime and thus diminish the danger of crystallisation. While it was not possible in the state of our present knowledge to say whether such washing could be safely applied to every variety of lime-stone, experiments in this direction were well worthy in his opinion of the serious consideration of architects.

Legal

HIGH COURT OF JUSTICE.—KING'S BENCH DIVISION.*

HOUSING SCHEME : ARCHITECT'S FEES.

ELKINGTON V. MAYOR OF BOROUGH OF WANDSWORTH.

(Before Mr. Justice Branson.)

In this action his Lordship decided in favour of the defendant council on the principles to be applied in estimating the remuneration to be paid to the plaintiff, Mr. Hylton Basil Elkington, F.R.I.B.A., for services as architect to the defendant council in the construction of houses on the Furzedown estate, authorised by the Ministry of Health. The two points to be decided were :—(1) What was the proper remuneration to be paid for the houses erected ; and (2) what was the right amount owing where the work had been abandoned.

JUDGMENT.

His LORDSHIP, in his judgment, said that the facts were not in dispute. The plaintiff was given advances from time to time, and now he claimed that a balance of £3,215 was owing to him. The defendants raised two objections to his claim :—(1) That the calculation of his fees for the 153 completed houses was on an erroneous basis ; (2) that the amount due for the 247 houses which had been abandoned should be on a *quantum meruit*. The question depended on the construction of the contract. Unless there were special circumstances the terms set out in the General Housing Memorandum No. 4 were to apply. Clause C of that memorandum applied to the present case. This provided for a payment of 5 per cent. on the first 12 cottages, 2½ per cent. on the next 60, and 1½ per cent. on the remainder. This scale covered the ordinary varieties in types of houses, and modifications made to avoid monotony. The plaintiff claimed 5 per cent. on those houses for which contracts were first signed in point of time. The defendant council contended that he should receive 5 per cent. on 12 houses, 2½ per cent. on 60 if that number were built, and 1½ per cent. on the remainder. Reading the document as it stood, the defendants' contention seemed to be the correct one.

Why should an architect's remuneration depend on whether the more expensive houses were the first to be ordered ? This interpretation was assisted by the fact that the words were first, next, and remainder, and not first, next, and subsequent. It could not be said that the memorandum of the Royal Institute of British Architects was incorporated in Memorandum No. 4 in the ordinary sense of that term. The former memorandum was divided into two parts, conditions of engagement and scale of charges. Nothing would have been easier than to contract under that scale instead of Memorandum No. 4, but this had not been done. The true interpretation of Memorandum No. 4 was that the memorandum of the Royal Institute of British Architects might be looked at to see what the conditions of engagement were, but the scale must be according to that laid down by the Ministry of Health. On this point the defendants' contention was correct.

The plaintiff also claimed to be entitled to be paid for the abandoned work two-thirds of what he would have received had the work been completed. His contention was that the scale of charges for abandoned work was to be in accordance with the memorandum of the Royal Institute of British Architects as modified by Memorandum No. 4 which, when properly construed, states what the scale is to be.

In his opinion the former memorandum did not provide a scale at which an architect was to be paid, but only provided for the time at which an architect was entitled to be paid for work which might not, in fact, have been abandoned at all. If the plaintiff's contention was correct he would be entitled, under the memorandum of the Royal Institute of British Architects, to charge 6 per cent. where the contract was for over £6,000 if the work had been abandoned. He did not seek to maintain such a position. The true interpretation was that the plaintiff was entitled to payment on a *quantum meruit*. The principles on which payment was to be made must be in favour of the defendants' contentions.

If the parties were unable to agree on the figures the matter would be sent to an official referee.

* From *The Times*, November 14th.

NOTES FROM THE MINUTES OF THE COUNCIL MEETING.

November 3rd 1924.

ARCHITECTURE AND CRAFTSMANSHIP.

The following recommendations passed by the Art Standing Committee were approved by the Council :—

1. That an additional Committee be formed, the purpose of which shall be to foster the best interests of the Crafts connected with the construction, decoration and equipment of buildings.

2. That the Allied Societies be invited to form local Committees with a similar object in their districts.

3. That one evening in each Institute Session be devoted to the reading of papers and discussion on subjects relating to Craftsmanship.

4. That short lectures of a popular kind be arranged for, from time to time, at Conduit Street, and locally by Allied Societies.

5. That the Board of Architectural Education be invited to consider whether more can suitably be done to assist the understanding of craft processes and the right use of material in the education of students.

R.I.B.A. Visiting Board.

The reports on the following Recognised Schools were approved and ordered to be transmitted to the authorities of the Schools :—

The School of Architecture, The Royal West of England Academy, Bristol.

The School of Architecture of the University of Cambridge.

The School of Architecture of the University of Liverpool.

The School of Architecture of the University of Manchester.

R.I.B.A. Examinations.

On the recommendation of the Board of Architectural Education a revised syllabus was adopted for the Intermediate and Final Examinations.

Recognised Schools Medal.

On the recommendation of the Board of Architectural Education the medal for the best set of designs submitted at the Annual Exhibition of Designs of Students of Recognised Schools exempted from the Final Examination was awarded to Miss Elsie Rogers (School of Architecture, Manchester).

Archibald Dawnay Scholarships.

On the recommendation of the Board of Architectural Education the following awards were made :—

R. H. Turner (Liverpool), £50 Scholarship.

A. C. Cameron (A.A.), £25 Scholarship.

Grants of £20 each—

G. A. Burnett (Leeds).

I. R. Erith (A.A.).

A. C. Todd (Liverpool).

R.I.B.A. Scholarships at the School of Architecture, Cambridge.

The Scholarships were awarded as follows :—

First Year : Miss Norah Aiton, Girton (£35).

Second Year : Mr. Edward Le Bas, Pembroke (£35).

The University of Leeds.

Mr. W. Alban Jones, President of the Leeds and West Yorkshire Architectural Society, and Mr. H. S. Chorley [*F.*] have been appointed as Delegates of the R.I.B.A. at the coming-of-age celebrations of the University of Leeds.

The London Survey Committee.

A special grant of ten guineas was made in aid of the work carried on by the London Survey Committee.

The Architects' Benevolent Society.

The usual Annual Grant of £100 was made to the funds of the Architects' Benevolent Society.

R.I.B.A. Visits.

The members of the Architecture Club were invited to take part in the R.I.B.A. visits to buildings, etc.

Boards and Committees.

The following appointments were made :—

L. Sylvester Sullivan, Board of Architectural Education.

George Drysdale, Board of Architectural Education.

E. J. Sadgrove, Royal Gold Medal Committee.

L. H. Bucknell, Competitions Committee.

T. Taliesin Rees, Housing Committee.

Registration.

The following were invited to serve on the Registration Committee :—

R.I.B.A.—

Major Harry Barnes, Arthur Keen, G. C. Lawrence, Percy Thomas, W. Gillbee Scott, J. Alan Slater.

Society of Architects—

A. J. Taylor, Noel. D Sheffield, C. F. Skipper, L. Sylvester Sullivan, E. J. Partridge, Thomas Wallis.

The Committee was given power to appoint, at their own discretion, a number of Advisory members as representatives of the Allied Societies and of other bodies and interests affected.

Alleged Overcrowding of the Profession.

The following members were appointed to serve on a Joint Committee (with representatives of the Architects' and Surveyors' Assistants' Professional Union) to enquire into the alleged overcrowding of the profession : Mr. Arthur Keen, Mr. Maurice E. Webb, Mr. Francis Jones.

Retired Fellowship.

Mr. F. H. Tulloch (elected Associate 1889, Fellow 1902) was transferred to the Retired Fellowship.

Fellowship.

Mr. H. S. Rogers, M.A., F.S.A., of Oxford, was elected to the Fellowship.

The Allied Societies.

The new draft Bye-laws of the Devon and Exeter Architectural Society were approved ; the affiliation of the Burnley District Society of Architects with the Manchester Society of Architects was approved.

Pupils in Office.

On the recommendation of the Board of Architectural Education the Council decided to recommend Members and Licentiates of the Royal Institute not to accept pupils until they have been registered as Probationers R.I.B.A.

The Examinations

R.I.B.A. INTERMEDIATE EXAMINATION.

Testimonies of Study.

The Council have approved the following revised regulations for the Testimonies of Study to be submitted by candidates for admission to the Examination :—

(*a*) The Orders.—A façade or part of a façade of a building of recognised importance, showing the application of one or more of the Greek, Roman or Renaissance Orders of Architecture. The student must state his authority for the Order and the building which should not be of recent design.

Sheet 1 : A general drawing of the building, sufficient to illustrate the application of the Order or Orders, with section of the façade wall, and plans of the façade wall in the storeys where the Orders occur.

Sheet 2 : Details of the Order or Orders.

(*b*) Freehand Drawing.—*Sheet* 3 : Classic Ornament or Mediæval Ornament. Freehand drawing from the round.

(*c*) Measured Drawings.—*Sheets* 4 *and* 5 : Measured drawings of an existing building or portion of a building not of recent construction to be selected by the candidate. His plottings and sketches are also to be submitted.

(*d*) Construction Applied to Elementary Design.—Working drawings of a domestic building of moderate dimensions, showing clearly the construction of floors, roofs, joinery, etc.

The quality of design will be considered, and work not reaching a reasonable standard of simple design will be disqualified on that ground.

Sheet 6 : General drawings to a scale of 8 feet to 1 inch.

Sheet 7 : A comprehensive half-inch detail.

Sheet 8 : Some full-size details.

Syllabus for the Examination.

The following revised syllabus is also approved :—

Friday (10—1, 2.30—5.30).—The title only of the Design Subject will be announced to candidates on Friday morning at the beginning of the examination.

(*a*) 1. A paper on the General History of Architecture. 2. A specialised paper on the History of Architecture of *one* of the following periods, to be selected by the candidate : (*a*) Greek and Roman ; (*b*) Byzantine and Romanesque ; (*c*) French and English Gothic ; (*d*) Italian, French and English Renaissance.

Saturday (10—1).—A paper on the Calculations of Simple Structures.

Monday (10—1, 2.30—5.30).—(*b*) Design.

Tuesday (10—1)—(*c*) *Part 1. Constructional Design and the properties and uses of Building Materials. (2.30—5.30). Part 2.

Thursday.—Viva voce examination, etc.

R.I.B.A. Final Examination.

The following revised syllabus has been approved :—

Wednesday (10—5.30).—(*a*) Design for a building of moderate dimensions or a portion of a more important edifice, to be made from particulars given. The drawings to comprise plans, elevation and section, to a small scale with some details to a large scale. Candidates may be required in the Oral Examination to explain the construction of any part of their design, though construction need not be shown in the drawings presented. The manner of completing the drawings is left to the discretion of the candidates.

The subject will be communicated in general terms to the candidates some days before the examination.

Before leaving the building on the first day the candidate must hand in a tracing of his Design, indicating its main lines, which must not be materially departed from in the subsequent development of his scheme.

On the first day luncheon will be available in the building.

Thursday.—(10—1.30) Design (continued) ; (1.30—2.30) interval ; (2.30—5.30) Design (continued).

Friday.—(10—1.30) Design (continued) ; (1.30—2.30) interval ; (2.30—5.30) Design (continued).

Saturday.—(10—1.30) Design (continued) ; 1.30—2.30) interval ; (2.30—5.30) Design (continued).

Monday.—(10—1.30) *(*b*) 1. General Construction, including shoring and underpinning ; (1.30—2.30) interval ; (2.30—5.30) *(*b*) 2. Iron and Steel Construction, Reinforced Concrete.

Tuesday.—(10—12.30) *(*c*) Hygiene, including Drainage, Ventilation, Heating, Lighting and Water Supply ; (12.30—1.30) interval ; (1.30—4) *(*d*) Specifications and the Properties and Uses of Building Materials. (4.30—5.30) †(*e*) Professional Practice. (1) Professional conduct : Duties and Liabilities of Client, Architect and Builder : Architect as Agent of Client : Architect as Arbitrator ; (2) Forms of Contract and Contract Documents, including General Clauses in Specifications ; (3) Law of Easements : Rights of Landlord and Tenant, including Dilapidations ; (4) Building Acts and Bye-laws.

These revised regulations and syllabus will come into operation for the Examinations which will be held in June of next year—*i.e.*, 1925.

R.I.B.A. Scholarship at the University of Cambridge.

The Council have sanctioned the award of the Scholarship this year as follows :—

First Year : Miss Norah Aiton, Girton (£35).

Second Year : Mr. Edward Le Bas, Pembroke (£35).

R.I.B.A. (Archibald Dawnay) Scholarships, 1924.

The Council have awarded Mr. R. H. Turner (Liverpool University), who was awarded a Scholarship of £25 in 1923, a Scholarship of £50, and have granted a renewal of the Scholarship of £25 awarded to Mr. A. C. Cameron (Architectural Association) in 1923.

Board of Architectural Education Silver Medal for the Best Set of Designs submitted at the Annual Exhibition of Designs of Students of Recognised Schools Exempted from the Final Examination.

The Council have approved the recommendation for the award of the Medal to Miss Elsie Rogers (School of Architecture, Manchester).

Examination in Professional Practice for Students of Recognised Schools Exempted from the Final Examination.

The following have been successful in this examination :—

Mr. G. G. Grant (Architectural Association).
Mr. L. Hiscock (Architectural Association).
Mr. T. S. Barnes (Architectural Association).
Miss S. G. Moberley (Architectural Association).
Miss J. E. Townsend (Architectural Association).
Mr. Aziz Ali (Architectural Association).
Miss A. Farewell Jones (Architectural Association).
Mr. R. J. Willis (Manchester University).
Miss E. Rogers (Manchester University).
Mr. W. H. Owen (Manchester University).
Mr. J. S. Dawson (Aberdeen).
Mr. H. S. Silcock (Liverpool University).
Mr. W. V. Jenkins (Liverpool University).
Mr. R. H. Turner (Liverpool University).
Mr. W. A. Norbury (Manchester University).
Mr. G. F. Shanks (Glasgow).
The Hon. H. A. Pakington (Architectural Association).
Mr. R. E. Enthoven (Architectural Association).
Mr. R. W. Donaldson (Liverpool University).
Mr. C. L. Bloodworth (Liverpool University).
Mr. J. H. Miller (Liverpool University).

* Some of the questions in the papers on Construction may have reference to portions of the subject for Design.

† This paper is also taken by students of Recognised Schools exempted from the Final Examination.

THE SCHOOL OF ARCHITECTURE, THE ROYAL WEST OF ENGLAND ACADEMY, BRISTOL.

The Council have decided, under certain conditions, to recognise the four years part-time course of the School of Architecture, the Royal West of England Academy, Bristol, as exempting from the R.I.B.A. Intermediate Examination.

Notices

THE THIRD GENERAL MEETING.

The Third General Meeting (Business) of the Session 1924–25 will be held on Monday, 1 December 1924, at 8 p.m., for the following purposes :—

To read the Minutes of the General Meeting (Ordinary) held on 17 November 1924, formally to admit members attending for the first time since their election.

To proceed with the election of the candidates for membership whose names were published in the JOURNAL for 18 October 1924 (p. 679) and 8 November 1924 (pp. 27–28).

To consider the following Notice of Motion by Mr. Francis Hooper [*F.*], seconded by Mr. H. D. Searles-Wood [*F.*].

"To request the Council to consider and if thought desirable to approach the Master Builders' Association and the Building Trades Union, and to offer any assistance deemed suitable in furthering the training of craft apprentices."

ELECTION OF MEMBERS.

5 JANUARY 1925.

The following applications for election have been received. Notice of any objection or other communication respecting the candidates must be sent to the Secretary for submission to the Council prior to Monday, 15 December 1924.

AS FELLOWS (3).

LAY : CECIL HOWARD [*A.* 1912], Aldringham, Leiston, Suffolk.

LOWRY : ROBERT [*A.* 1916], 33, St. James's Street, S.W.1 ; Denham Hill, Denham, Bucks.

WRATTEN : EDMUND LIVINGSTONE [*A.* 1902], 18 Queen Anne's Gate, Westminster, S.W.1 ; "White Cottage," Warlingham, Surrey.

AS ASSOCIATES (9).

DAWSON : JAMES STOTT [Passed six years' course at Robert Gordon's Colleges, Aberdeen—Exempted from Final Examination after passing Examination in Professional Practice], 23, View Terrace, Aberdeen.

DONALDSON : ROBERT WEIR, B.Arch. Liverpool [Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice], 56, Hertford Road, Bootle, Liverpool.

HISCOCK : LESLIE ROBERT [Passed five years' course at Architectural Association—Exempted from Final Examination after passing Examination in Professional Practice], 44, Wodeland Avenue, Guildford.

NORBURY : WILLIAM ALAN, B.A. [Passed five years' course at Manchester University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice], Broadmead, Broad Lane, Hale, Cheshire.

OWEN : WILFRED HERBERT [Passed five years' course at Manchester University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice], 37, George Street, Cheetham Hill, Manchester.

SHANKS : GEORGE FERGUSON [Passed five years' course at Glasgow School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice], 193, Kent Road, Glasgow.

SILCOCK : HUBERT SPENCER, B.Arch. Liverpool [Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice], Brandhoek, Walton Road, Stockton Heath, Warrington.

TURNER : RALPH HENRY, B.Arch. Liverpool [Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice], "Claremont," St. Andrew's Road, Bridport, Dorset.

WILLIS : REGINALD JOHN, M.A. [Passed five years' course at Manchester University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice], The School of Architecture, Victoria University, Manchester.

ORDINARY GENERAL MEETINGS.

SESSION 1924–25.

Mondays—at 8 p.m., except where otherwise stated.

1924.

Nov. 3.—INAUGURAL MEETING : President's Address at 8.30.

,, 17.—GENERAL MEETING : "Planning for Good Acoustics," by Hope Bagenal [*A.*].

Dec. 15.—GENERAL MEETING : "Shop Fronts and their Treatment," by Arthur J. Davis [*F.*].

1925.

Jan. 19.—GENERAL MEETING : "Applications in Building and Foundations of Modern Engineering Construction," by Oscar Faber, O.B.E., D.Sc.

Feb. 2.—GENERAL MEETING : President's Address to Students at 8.30.
Presentation of Prizes.

,, 16.—GENERAL MEETING : "Sculpture in relation to Architecture," by D. S. McColl.

Mar. 16.—GENERAL MEETING : "The Corporate Spirit in Architecture," by F. R. Hiorns [*F.*].

,, 30.—GENERAL MEETING : "The Architectural Treatment of Ferro-Concrete," by A. Beresford-Pite [*F.*].

April 20.—GENERAL MEETING : "Natural and Artificial Lighting," by Percy J. Waldram [*Licentiate*].

May 18.—GENERAL MEETING : "The Influence of the Popes on Renaissance Architecture," by Mrs. Arthur Strong.

June 22.—PRESENTATION OF THE ROYAL GOLD MEDAL, at 8.30.

IAN MACALISTER, *Secretary.*

The Architectural Press will be issuing immediately, through their Book Department, a new work entitled *The Principles of Architectural Composition*, by Mr. Howard Robertson, S.A.D.G., F.S.Arc., Principal of the Architectural Association Schools of Architecture. The volume, which is illustrated, is devoted to an elementary study of the underlying principles of architectural composition, and their application to the varied problems with which architects and designers are faced.

Competitions

UGANDA RAILWAY NEW OFFICE, NAIROBI.

Apply to the Crown Agents for the Colonies, 4 Millbank, Westminster, S.W.1. Closing date for receiving designs, 28 February 1925. Assessor : Mr. William Dunn, F.R.I.B.A. Deposit £1 1s.

RECONSTRUCTION OF THE KONINGINNE BRIDGE, ROTTERDAM.

With reference to the announcement of this competition in a recent issue of the JOURNAL, His Majesty's Consul-General at Rotterdam has informed the Department of Overseas Trade that he has received from the Rotterdam municipal authorities a series of 72 questions and answers amplifying and explaining the technical points which arise in connection with the plans.

As a translation would involve considerable time and difficulty His Majesty's Consul-General suggests that any British firm desiring specific information on the subject should communicate with him direct.

BETHUNE MEMORIAL TO THE MISSING.

The Imperial War Graves Commission desire Members and Licentiates of the Royal Institute to be reminded that applications to take part in the above Competition from persons other than those who had signified their intention of competing on or before 1 January 1924 cannot be considered. Due notice of this regulation was published in the Professional Press on various occasions during August and September, 1923.

MASONIC MEMORIAL COMPETITION.

Apply to The Grand Secretary, Freemasons' Hall, Great Queen Street, W.C.2. Last day for applying for conditions, 23 August 1924. Deposit, £1 1s. Closing date for receiving designs, 1 May 1925. Assessors : Sir Edwin Lutyens, R.A. [*F.*] (appointed by the President) ; Mr. Walter Cave [*F.*], Mr. A. Burnett Brown, F.S.I.

MANCHESTER ART GALLERY.

Apply to the Town Clerk, Town Hall, Manchester. Closing date for receiving designs, 20 January 1925. Assessors : Mr. Paul Waterhouse, F.S.A. [*F.*], Professor C. H. Reilly, O.B.E. [*F.*], Mr. Percy S. Worthington, Litt.D., F.S.A. [*F.*].

SOUTHPORT : FIRST CHURCH OF CHRIST SCIENTIST ; CHURCH AND SUNDAY SCHOOL.

Apply to Messrs. J. E. Sanders & Son, A.R.I.B.A., 219a, Lord Street, Southport. Closing date for receiving designs, 1 December 1924. Deposit 10s. Assessors : Messrs. J. E. Sanders & Son.

Members' Column

CHANGES OF ADDRESS.

MR. A. P. LLOYD (*A.*) has moved from 7 New Square, Lincoln's Inn, W.C.2., to 71 Lincoln's Inn Fields (Telephone : Holborn 1053).

MESSRS. SMEE & HOUCHIN, Architects and Surveyors, have moved from Byron House, 82-85 Fleet Street, to "Fleet House," 58 Fleet Street, E.C.4.

OFFICE ACCOMMODATION.

ARCHITECT, having West End offices, would like to share same with another. For particulars write Box 2122, c/o Secretary R.I.B.A., 9 Conduit Street, W.

APPOINTMENTS WANTED.

A.R.I.B.A. seeks facilities for carrying on own practice in a London office where his occasional assistance could be utilised ; on mutual terms.—Box 2532, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

STUDENT R.I.B.A. desires post in London. Age 23 ; unmarried. Articled 1919-23, in office where following work was carried out : Hospitals (2), Additions to Public School, Convalescent Home, Public Library, many Banks, Church, and Domestic Work. Salary required, £208 per annum. Apply Box 1211, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

ASSISTANT RECOMMENDED.

A.R.I.B.A. in the North thoroughly recommends a capable junior assistant who is anxious to obtain a few years' experience in a good London office. Apply Box 1711, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

Minutes II

SESSION 1924-1925.

At the Second General Meeting (Ordinary) of the Session held on Monday, 17 November 1924, at 8 p.m., Mr. J. Alfred Gotch, F.S.A., President, and afterwards Mr. H. M. Fletcher [*F.*] in the chair.

The attendance book was signed by 24 Fellows (including 9 members of the Council), 35 Associates (including 4 members of the Council), 3 Licentiates and a large number of visitors.

The Minutes of the meeting held on 3 November 1924 having been taken as read were confirmed and signed by the Chairman.

The Hon. Secretary announced the decease of the following members :—

Edwin Seward, elected Associate 1876, Fellow 1889 and placed on List of Retired Fellows, 1921.
William Pywell, elected Associate 1889, Fellow 1905.
William Ernest Barry, elected Associate 1892.

Frank Asquith Brewerton, M.C.,	elected	Associate	1913.
John William Cockrill	,,	,,	1888.
Francis Eldred Lodge Harris	,,	,,	1887.
Robert Brodie Mather	,,	,,	1881.
Thomas James Peters	,,	,,	1921.
Arthur Thomas Philp	,,	,,	1918.
Edward Henry Rouse	,,	,,	1921.
Francis Ross Bates	,,	Licentiate	1911.
George Ronald Bryce	,,	,,	1911.
Harvey Dyball	,,	,,	1910.
John Whitelaw Lockhart	,,	,,	1911.
William David Towell Munford	,,	,,	1911.
Joseph Perrault	,,	,,	1911.
Walter Shaw	,,	,,	1911.
Cyril Hugh Slatter	,,	,,	1912.
Thomas Winder	,,	,,	1910.

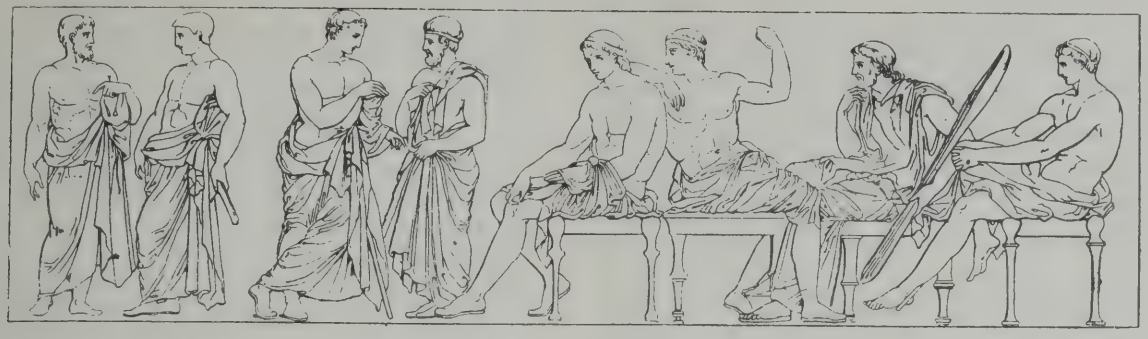
and it was RESOLVED that the regrets of the Royal Institute for the loss of these members be recorded in the Minutes.

Mr. Hope Bagenal [*A.*] having read a Paper on "Planning for Good Acoustics" and illustrated it by lantern slides, a discussion ensued and on the motion of Dr. R. E. Stradling, Director of Building Research, Department of Scientific and Industrial Research, seconded by Dr. Alex. Wood, a vote of thanks was passed to Mr. Bagenal by acclamation and was briefly responded to.

The meeting closed at 10.25 p.m.

R.I.B.A. JOURNAL.

Dates of Publication.—1924 : 8th, 22nd November ; 6th, 20th December. 1925 : 10th, 24th January ; 7th, 21st February ; 7th, 21st March ; 4th, 25th April ; 9th, 23rd May ; 13th, 27th June ; 18th July ; 15th August ; 19th September ; 17th October.



1. New Light on Greek Art*
2. Vitruvius and His Module

BY ERNEST FLAGG.

(1) New Light on Greek Art

THE only ancient work on architecture which has survived to our times was by Vitruvius, an obscure architect and mediocre writer of the first century A.D.

His avowed object in writing was to correct what he conceived to be the faults of Greek architecture by formulas evidently of his own making.

Mixed in with much that is either idle or false, his book contains a few passages of great value concerning certain Greek methods of design in common use when he wrote. From these we learn that it was the custom of the Greeks to use modules to obtain harmony of proportion in buildings.

In all living creatures the parts are proportional. Seeing this principle exemplified everywhere in nature, it was natural that man should have attempted to use it in his own work. It is not practicable to make all parts of all buildings proportional, but many may be invariable in their design as we see them in Greek Doric buildings.

These invariable parts, or some of them at least, were the key of the work, placed on the structure just as the musician places the signature on the written sheet of music.

Notwithstanding the fact that the formulas of Vitruvius do not agree with the ancient work, his unsupported word has generally been accepted as true during the last 500 years ; so that to-day, in every civilised country, in every school of architecture, the teaching is based on his statements which can now be proved false. This has been disastrous for art. In large measure, architecture has been degraded from the status of a fine art to the mere exercise of mathematical formulas. The outward forms of Greek architecture have been simulated, but the principles which produced those forms have not been used nor understood.

When a student at *l'Ecole des Beaux-Arts*, in Paris, in working on a *projet*, to save time and trouble I first drew in all the axial lines of the plan. They formed squares so nearly equal that I decided to make them equal and observe the result. To my satisfaction the design seemed improved, and the thought presented itself that perhaps in this way harmony of proportion might be obtained with certainty for which, otherwise, I should be blindly groping. Further experiments seemed to confirm the correctness of this theory and also revealed other unexpected benefits of importance. So convinced did I become of the advantages of this method, that I determined to use it in actual practice, and during 35 years, in work large and small, I have done so with satisfaction and profit.

When one uses a system of this sort, the mark of the module appears on the work. As the fixed unit pervades every part of the design, it is only natural to use it for the spacing of features of repetition such as consoles, triglyphs, etc.

A few years ago, when examining a restoration of certain Greek temples, the thought flashed on me that the triglyphs might be the mark of the module, placed there for the same reason which had so long prompted me to mark the module on my own work. Upon investigation, strong evidence was found of the correctness of this supposition. In many temples the outer faces of the lateral walls of the cella coincide with

*A Paper read by Mr. Flagg before the Institute of France, at the meeting of the Academy of Fine Arts, 28 October 1924.

lines drawn through the plan from centre to centre of opposite triglyphs. These same walls often stop on such a line or else with pilasters centred on one. In some buildings I found a constant ratio between width of bay and height of column and similar points of likeness in other groups. I also noticed that practices which I had found most convenient in the use of modules were the very ones employed by the Greeks.

From my point of view the truth was clear, but others did not see it as I did. Being sure of my ground, I determined to find and present absolute proof; but how begin?

To prove the unit it would be necessary to prove the intended dimensions. To do that there must be something definite to work from, and how was it to be found where all was uncertainty and disagreement? Practically none of the findings of the principal investigators agree at a single point; many dimensions much to be desired are missing, and measurements of my own would be suspected of having been influenced by the theory. For a long time the task seemed hopeless, but finally progress began to be made.

In studying the temple of Diana Propylæa at Eleusis I discovered that according to Hittorff's figures the height of the top step is contained exactly 25 times in the height of the column and stylobate. It was also evident that other important dimensions were intended to agree with multiples of the unit. Similar conditions were found in the Doric portico at Athens and in other structures.

Even the temple of Rome and Augustus at Pola, a Roman building of a much later date and different order, conformed to the rule, and fifty times the height of the top step equals the height of the stylobate and order.

Here a strange condition was found. The building is composed of a pronaos and cella, together forming one façade on the flanks, yet each of these two parts has its own governing unit. The unit of the pronaos is represented by the top step and that of the cella by a continuation of the step in the form of the plinth, but slightly higher or thicker than the step. By ingenious adjustments, clearly apparent, the two units are made to work together and the various divisions of height in both parts agree with multiples of their proper units.

In the Parthenon the intended height of the order exactly equals 25 times the step unit. There is not time to multiply examples. I can only say that similar conditions are found in every one of the several ancient buildings I have had an opportunity to study since making the discovery.

In this way it was possible to be sure of various intended dimensions. Certainty was also had in other ways.

The stylobate top was intended to be in the proportion of 4 of breadth to 9 of length. This is certain both because all measurements closely approximate that ratio and because the same ratio is found in stylobates of other temples, but what were the exact dimensions? The investigators all differ in their findings. Neither do any two agree as to the width of the bays from axis to axis of columns. Penrose gives 169″.056 and Collignon 168″.898.

Having observed that multiples of 13 abound throughout the work, it seemed possible that the building might be designed in that key. A test of this produced the most astonishing results. The unit 13 was found in every dimension of height which had been made certain of in the way above described. Also similar keys were found in other buildings.

Now it was seen that the width of the bay was 13^2 or 169″, which lies between Penrose's and Collignon's measurements. Being sure of the bay it was easy to make sure of the dimensions of the stylobate top, because it must contain 16 times the bay one way by 7 the other way with equal margins to the edge of the step. It was immediately seen from the measurements that the margins were intended to equal the height of the capital or what may be called the capital unit, which is two times the square of 13 = 33″.8, and that the intended length of the stylobate top was 2,737″.8 and its intended breadth 1,216″.8, figures which agree closely with the measurements and are to each other as 4 to 9. Let me say, by way of parenthesis, that the word "exactly" is here used in its literal sense.

It was also found that the capital unit is exactly contained in the length and breadth of the peristyle platform, in the height of the order and in the width of the bay. The intended width of the bay when multiplied by the number of bays at end and side gives two quantities which, of course, stand to each other in the proportion of 7 to 16, corresponding to the number of end and side bays. If to each of these quantities the intended height of the capital be added, two other quantities are produced which are to each other as 4 to 9, corresponding to the width and length of the stylobate platform.

The height of the triglyph, including base, when added to the height of the cornice exactly equals half the width of the bay, a condition found in other temples.

The height of the triglyph is contained exactly 10 times in the height of the building to top of cornice; 20 times in the width of the stylobate platform and 45 times in its length; 10 times the height of the triglyph shaft, including base, exactly equals the height of the order, and 10 times the height of the triglyph capital exactly equals the height of the stylobate.

The height of the top step is to the capital as 16 to 25, and the height of the capital is to the height of the triglyph as 10 to 18.

The sinkage at the joint between capital and shaft represents the 100th part of the height of the capital, and this same small unit is exactly contained in all minor and major divisions of the façade. The whole height of the building equals 2,600 of them.

The units prove that the small base below the steps was a part of the building intended to be seen, in part at least. It served the double purpose of showing that the steps were not for mortal use, but figurative, and gave scale to the building, which otherwise it lacks.

Many pages might be filled with interesting facts of this sort, but enough has been said to show how certainty was reached as to many intended dimensions.

The work of investigation is of the most absorbing interest, in which days pass as hours and weeks as days. Each new discovery makes the way easier and one becomes enraptured with delight and enthusiasm as these ancient fabrics slowly and as if reluctantly yield up their long guarded secrets and the true principles of Greek art are disclosed.

My figures have been tabulated. The measurements are not mine. All that I have done is to discover a number of the units and the meaning of several of the parts. My figures may easily be verified, and one who does so can hardly fail to be astonished at the close agreement of the work with the governing units. It conforms, indeed, with an accuracy unbelievable without proof.

The question now presents itself, what was the meaning of this marvellous accuracy? Such work was not done without an object.

There can be no doubt that the eye of the ancient architect was trained to harmony of dimensions just as the ear of the modern musician is trained to harmony of sounds. The numerous slight refinements to correct optical illusions show conclusively that this was so, for they would not have been made if the need for them had not been felt.

Everywhere in Greek work are found simple proportions, *i.e.*, proportions based on the lower digits as 1 to 1—1 to 2—2 to 3, etc. There are only 10 of these combinations between 5 on one side and 5 on the other, and only 26 between 5 on one side and 10 on the other. It is quite conceivable that the eye could be trained to observe these ratios, after correction had been made for optical illusions, such as found in the Parthenon. Even with us almost any architect of experience can tell with considerable certainty the number of diameters in the height of a column.

There is close analogy between architecture as a fine art and music; one relates to harmony of dimension and the other to harmony of sound. As each musical composition is written in a certain key, so each ancient building appears to have been designed in a certain key. The key of the Parthenon peristyle was 13, and every intended dimension, large or small, so far as I have been able to discover, is a multiple of 13. The width of the bay is 13^2; the height of the capitals is 2 times 13^2; the length of the triglyph is 6^2 times 13^2, and so it is with all the other intended dimensions. In like manner the Theseium was designed in the key of 7, and the temple of Diana Propylæa at Eleusis in the key of 17. Without knowledge of the key little can be known of the design, while with the key much of the work may be unravelled, so to speak, like a piece of knitting.

Since the destruction of the ancient learning, architecture has not been a fine art in the Greek sense, but at most the imitation of one. For 2,000 years it has been in the condition music or poetry might have been in if, ages ago, all knowledge of harmony and measure had been lost and not recovered. During five centuries we have been copying the outward forms produced in the practice of the ancient fine art architecture. Is it not possible for us now to practise the art itself and so create new forms more beautiful perhaps than those of the Greeks. We are of the same stuff as they; but they possessed certain simple principles, since lost, which produced great art. From their work we may recover a knowledge of those principles and apply them to our own benefit.

Vitruvius gives us two doctrines: one of Grecian origin and the other apparently of his own invention. These investigations prove the one true and the other false. His own doctrine relates to the lower diameter of the column as the module and to his various formulas for the design of the orders. The Greek doctrine was in effect as follows:—

To be well designed, a structure should have harmony as we see it in the human form, where there exists a symmetrical relationship of proportion between the members and the whole. That harmony may be had by the use of modules taken from the work itself to serve as terms of comparison for the various parts and the whole structure.

Since the Renaissance, architecture has followed the false doctrine of Vitruvius and the true doctrine of the Greeks has remained a dead letter.

The art of the Greeks was simple. It had for its object the extraction of the essence of beauty in nature. It was conventional. It did not simply copy nature, for that is useless. We see natural objects all about us in better form than they can be copied. Naturalism is vulgar. Art should go below the surface and reveal the spirit.

In man himself, and, indeed, in every living creature from the largest animal to the smallest insect, we see exemplified the correct principles of design. Nature is lavish in her instruction. In each living production harmony of proportion, unity, scale, symmetry and all the other essential qualities of correct design may be found. So that, to tabulate them, one has but to record

what there stands revealed. The object in the use of the principles of design should be the production and the preservation of beauty. If that is not the result, then they have been either misunderstood or wrongly applied.

There may be art in making things unpleasant to see, like many modern pictures, statues and buildings; but of what use is it? There is enough ugliness in the world without taking pains to produce more. In architecture, nine points of beauty depend on proportion, and good proportion may be had with certainty by the use of modules. In that way one may design, always using those simple combinations of dimensions which are sure to please.

In recent times, in all civilised countries there has appeared a restless tendency to break away from former methods, to abandon the meaningless copying of ancient forms and to walk independently. Such a change would be most commendable if made without sacrifice of beauty and refinement. Heretofore even the semblance of the ancient art has sufficed to stamp many of our productions with a certain cachet of elegance albeit but the outer shell or husk of the true art. Now even that is missing. Beauty and refinement seem no longer the fashion.

With us in America, much recent work has not even common sense to recommend it. The desire to hide or camouflage the steel frame has resulted in a veritable epidemic of falsifications. Many of our constructions are simply architectural scenery—falsehoods, in which neither the construction nor the design is what it pretends to be. Here in France, much of the new work appears more German or Bolshevist than French. The exquisite taste which for so many centuries has characterised French productions and made of Paris the art centre of the world appears to be under a cloud. In many new buildings one sees in the ornamentation a strong leaning towards realism, much of it being simply the naturalistic reproduction of foliage—photographic and meaningless. On the other hand, in paintings, there is often a grotesque departure from nature, while in both beauty, the *raison d'être* of art, is missing.

The taste of the world must indeed be at the ebb, when such things are found here.

"If the salt hath lost its savour, wherewith shall it be salted?"

My hope is that these and further disclosures of Greek methods may awaken a new interest in classic art, and that this time it will not be the outward form which is copied, but those simple yet profound principles which enabled the ancients to carry taste to the highest point it has reached on earth.

Thus far little has been done, but that little may prove of great value. The documents which I have prepared prove conclusively the truth of the Greek doctrine transmitted to us by Vitruvius, and show, in some measure at least, how it was applied.

The door is now ajar and may be pushed wide open, admitting us to full knowledge of those methods of design which have proved most worthy of the genius of man.

(2) Vitruvius and His Module

FROM Vitruvius we learn that it was the custom of the ancients to use a module or fixed measure in architectural design, and existing remains of their work confirm the truth of this statement. The module was, as he says, selected from some part of the work itself and served as a gauge of proportion for all parts.

The easiest way to use such a system is to draw on paper ruled for the purpose with parallel lines at equal intervals in both directions, and assume that the spacing represents the module.

Vitruvius says: "A ground plan is made by the proper successive use of compasses and rule through which we get outlines for the plane surfaces of buildings." (Book I, Chapter 2.)

This seems to mean the alternate use of compasses and rule in making parallel lines in both directions upon which to trace the plan, and the work itself indicates clearly enough that this was indeed the way it was made. (See Figs. 1, 2 and 3.)

In Book I, Chapter 2, Vitruvius says: "The ordering (or disposition) of a building is the due proportioning of the parts to each other and to the whole and the obtaining of a symmetrical relationship between them. This is done by the use of a quantity called 'posotes' by the Greeks, being a module taken from a part of the building itself to serve as a term of comparison." *

Again, in Book III, Chapter 1, he says: "The disposition of an edifice consists in the proportions, which the architect should study with the greatest attention. That is to say, the ratio of dimensions which the Greeks called 'analogia'; this ratio is the symmetry between a certain part of the work and the whole, and it is this part which regulates the proportions. To be well ordered, an edifice must have

* Ordinatio est modica membrorum operis commoditas separatim, universaeque proportionis ad symmetriam comparatio. Haec componitur ex quantitate quae Graece "posotes" dicitur. Quantitas autem est modulorum ex ipsius operis sumptio, e singulisque membrorum partibus universi operis conveniens effectus.

symmetry and proportion, as it is found in the human form." *

In the above passages Vitruvius mentions no particular part for use as a module, but further on prescribes the diameter of the column for the Ionic order and half the diameter of the column or the width of the triglyph for the Doric order.

There is good reason to believe that this was not the common practice, but something new and unusual. Perhaps an innovation of his own, for it nowhere agrees with work before his time.

Where a unit is used in this way, the most obvious one to take, for the plan at least, is the distance from centre to centre of columns, or rather half that distance, so as to bring a governing line alternately on the axis of the solid and the void, which, in the Doric order, would coincide with the centres of the triglyphs. That this was indeed the common practice should be evident enough, one would think, from a glance at Figs. 1, 2 and 3, taken at random from Canina's map of Ancient Rome. It does not require much acumen to see that

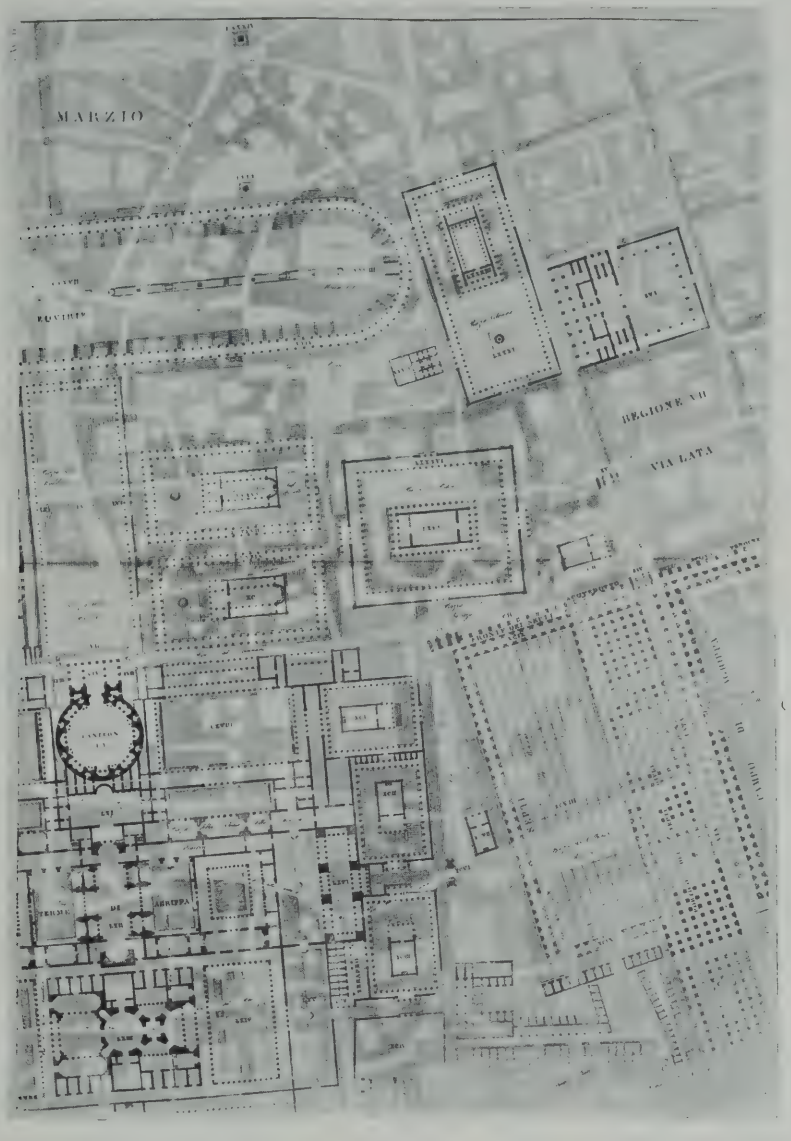


FIG. 1

* Aedium compositio constat ex symmetria cujus rationem diligentissime architecti tenere debent. Ea autem paritur a proportione, quae Graece "analogia" dicitur. Proportio est ratae partis membrorum in omni opere totiusque commodulatio, ex qua ratio efficitur symmetriarum. Namque non potest aedis ulla sine symmetria atque proportione rationem habere compositionis, nisi uti ad hominis bene figurati similitudinem membrorum habuerit exactam rationem.

FIG. 2

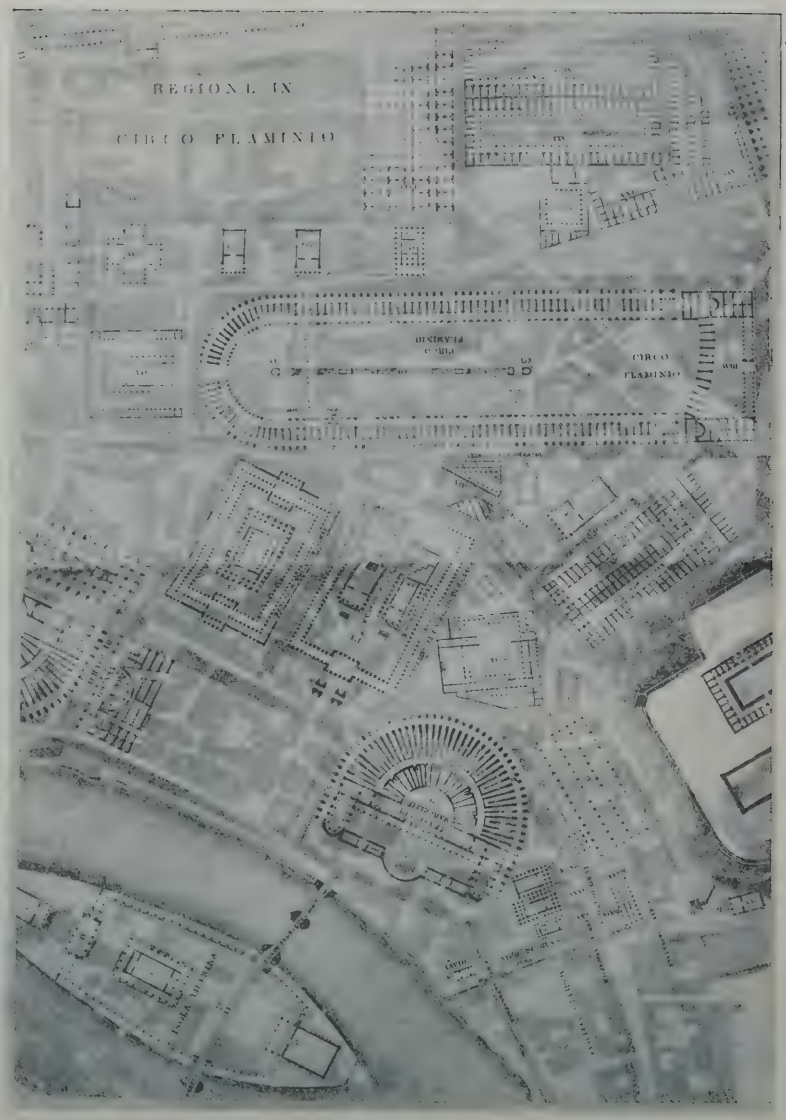


FIG. 3

these plans were made, in each case, by the use of some fixed measure or measures.

When Vitruvius began to write his book, it does not appear that he had any such module as the lower diameter of a column or the width of a triglyph in mind, for in Book I, Chapter 2, he says :—

" Moreover symmetry is the fitting accord of the members among themselves and of the parts with the whole, because of the uniformity of measure with reference to a certain part. As in the human body, where there is found a symmetrical harmony between the arm, foot, palm, finger and other small parts, so it is in perfected works. And especially in temples where symmetry may be calculated from the thickness of a column or the width of a triglyph, *or even from a module.*"*

As further on, in his third and fourth books, he takes the thickness of columns or the width of triglyphs as modules, this is equivalent to saying symmetry may be calculated from the thickness of a column or the width of a triglyph, *or even from the thickness of a column or the width of a triglyph.*

Evidently, when he wrote Book I, he was thinking of some other measure for use as a module than the one subsequently adopted. Notwithstanding his claim to be transmitting to others what he himself had been taught, it seems probable that this particular module was a thing of his own invention. The whole tone of his book accords well with such a supposition. He reveals himself as self-important and of a highly mathematical turn of mind. His object was to present a complete and " improved " compendium of architecture; and his pompous introductions to the various books into which his work is divided show how thoroughly well qualified he felt himself for the task. When he says, " Invention is the solving of intricate problems and the discovery of new principles by means of brilliancy and versatility," he evidently has himself in mind.

Guadet says of him : " Vitruve, écrivain à coup sùr médiocre, architecte probablement médiocre, si tant est qu'il fut architecte, avait laissé un livre très discutable, recueil plus ou moins approximatif des règles de l'architecture grecque ; très éloigné des origines de cet art, il fut aux créateurs de l'architecture ce que furent les rhéteurs aux grands orateurs, les sophistes aux grands philosophes. Mais comme écrivain antique d'architecture, il survivait seul, et la critique n'était pas encore née : le XVIe siècle le crut sur parole, comme on croyait alors à tout ce qui s'était écrit en latin ; et les auteurs de la Renaissance, Alberti, Vignole, Palladio, Philibert Delorme, tous grands artistes, le suivirent dans la voie de l'architecture chiffrée ; seulement le génie de la Renaissance resta libre malgré tout, et l'art fut supérieur à l'enseignement qu'il recevait."

Five hundred years had passed since the great Epoch of Greek art when Vitruvius wrote, but some of its traditions still lingered and his work is the only written link between them and us. It is therefore of inestimable value in spite of the incapacity and vanity of the author, who, while recording some of the Grecian doctrines has his own methods to exploit. It is important to discover which was which, and the key for so doing lies in existing remains of the ancient buildings themselves. They show the use of numerous units in their design, and so far at least substantiate the truth of what Vitruvius says of the common use of a module ; but they also show that the module he recommends was not the common one. Unfortunately, up to the present time, this truth has not been sufficiently realised nor the full significance of the module in Greek architecture understood. Instead of a simple way of obtaining harmony and preserving rhythm in architecture by measure, as in music and in poetry, we have been taught architecture chiffrée, as Guadet says.

Through the mediocre intellect of Vitruvius this great principle of Greek art has been seen as through a glass—darkly. Some glimmering of it there has been, but so confused in the presentation as to be worse than useless. Fortunately by the ancient buildings themselves his text may be sifted in the light of truth and the wheat separated from the chaff. Figures do not lie, as the saying is, and by them we may unravel the long tangled skein of Greek design and understand the true part which the module played in it If this knowledge had been placed in the hands of the great men of the Renaissance, what might not they have accomplished and how profoundly would it have affected modern art !

If Vitruvius's work had never been discovered it is probable that our knowledge of the true principles of Greek art would have been far greater than it is now, for then we should have studied the ancient works open-mindedly and received our information at first hand from sources which cannot lie. As it is, we have accepted as true the statements of a man about whom nothing is known except what he says of himself, and what he does say is not of a nature to inspire either confidence or respect. On his own statement he stands self-condemned as knowing little of, and being out of sympathy with, Greek art. Between him and the architecture of Paestum and the Parthenon there was a gulf fixed too broad for him to see across. Yet he would " correct " its faults by the application of a rule of thumb of his own making. In Book IV,

* Item symmetria est ex ipsius operis membris conveniens consensus ex partibusque separatis ad universae figurae speciem ratae partis responsus. Uti in hominis corpore e cubito, pede, palmo, digito ceterisque particulis symmetros est eurythmiae qualitas, sic est in operum perfectionibus. Et primum in aedibus sacris aut e columnarum crassitudinibus aut triglypho aut etiam embate . . . invenitur symmetriarum ratiocinatio.

Chapter 3, he sets out to do this for the Doric order and displays his qualifications for the work thus :—

" Some of the ancient architects said that the Doric order ought not to be used for temples, because faults and incongruities were caused by the laws of its symmetry. This is not because it is disagreeable in appearance or lacking in dignity, but because the arrangement of the triglyphs and metopes (lacunaria) is an embarrassment and inconvenience to the work.

" For the triglyphs ought to be placed so as to correspond to the centres of the columns, and the metopes between the triglyphs ought to be as broad as they are high. But in violation of this rule, at the corners triglyphs are placed at the outside edges and not corresponding to the centre of the columns. Hence the metopes next to corner columns do not come out perfectly square, but are too broad by half the width of a triglyph. Those who would make the metopes all alike, make the outermost intercolumniations narrower by half the width of a triglyph. But the result is faulty, whether it is attained by broader metopes or narrower intercolumniations. For this reason, the ancients appear to have avoided the scheme of the Doric order in their temples.

" However, since our plan calls for it, we set it forth as we have received it from our teachers, so that if anybody cares to set to work with attention to these laws, he may find the proportions stated by which he can construct correct and faultless examples of temples in the Doric fashion."

He then proceeds to give mathematical formulæ :— " In these ways," he says, " all defects will be corrected, whether in metopes or intercolumniations or lacunaria, as all the arrangements have been made with uniformity."

That one who could write thus should ever have been accepted seriously as authority on the Doric order is astonishing. To try to apply his theory to Greek Doric buildings is to insult the designers of them.

For more than five hundred years this obscure writer has imposed his teachings on a credulous world. His word has been accepted in preference to the testimony of the buildings themselves. His module fits no work antedating his time, yet faith in it with most people remains unbroken ; the fantastic theory of this mathematician is accepted in all seriousness and design of the orders reduced to a mere application of formulæ or rule of thumb. Every existing Greek building is a protest against such " art."

To one approaching the subject with an open mind it seems extraordinary that architects and archæologists should persist in using the Vitruvian system in representing measurements of ancient work when the fact that it does not fit is so patent. Yet with many investigators the unsupported word of Vitruvius seems to outweigh the evidence of their own senses, and in measuring ancient monuments his scale is applied though practically every dimension proves it wrong.

As an example of what is meant, take this drawing (Fig. 4). It is from Buhlman and is a fair sample of similar drawings which may be found almost by the square mile in works by architects and archæologists concerning classic buildings. Here we have, instead of standard units, metric or otherwise, the Vitruvian module and parts. The diameter of the column only is given in centimetres and all others in the Vitruvian way ; the module being one-half the diameter of the column and the part one-thirtieth of the module. Unless by some happy accident, none of these measurements conforms to the rules of proportion laid down by Vitruvius. Two modules equal the width of the column, because that is assumed, while beyond all is chaos and an aggravation to one who wants to know the dimensions in standard units.

In order to make this drawing, the work was, of course, carefully measured, then these measurements were laboriously translated into the Vitruvian modules and parts as noted in the drawing. Now to obtain the dimensions in comprehensible form the investigator must as laboriously again translate the figures given into standard units. This sort of thing has been going on for four hundred years and nothing gained by it but a vast amount of misdirected labour and indubitable proof that the lower diameter of the column was not the module used in designing the work, but simply a fantastic theory based on the unsupported word of this obscure writer of the first century.

The fame of Vitruvius is great and doubtless always will be so, but in the future its basis is likely to change, for his distinction will rest on the fact that he was the perpetrator of one of the most gigantic hoaxes ever launched in an unsuspecting world.

His procedure was simple, and plainly apparent when the truth is known. In each of the three orders of architecture there is a family resemblance between the various specimens. To establish a rule or formula for the design of an order, one has simply to take a normal example, measure it and tabulate the results. The formula thus made will not be likely to conform exactly to any other specimen, but because of the family resemblance it will often come near doing so. The rules laid down by Vitruvius have never been found to apply exactly in a single instance, to work antedating his time ; doubtless because the particular specimen on which his proportions were based has not been found, but they do necessarily apply approximately in certain cases, and when that happens great is the joy of the investigators. This unfortunate habit of theirs is a great hindrance to anyone who is more interested in obtaining the true dimensions than in learning whether Vitruvius was, in certain instances, somewhere near right.

What Vitruvius did anyone with even a superficial knowledge of classic architecture could do; but, in the doing, almost anyone would make fewer mistakes.

He would not say, for example, that the ancients avoided the use of the Doric order in building temples, a statement which shows that Vitruvius had not travelled much, even in Italy, and that he had little or no knowledge of architecture beyond the vicinity of Rome.

Nor would he say that the width of the triglyph was half that of the column, that temples are twice as long as they are wide, that triglyphs should be placed over the axes of corner columns, and many other absurdities.

His book is indeed a veritable tissue of mistakes. He seems to have been a sort of Jack-of-all-trades and had probably begun life as a clock maker, for he says the three parts of architecture are the building of buildings, the construction of machines and the making of clocks. That a man of his calibre should have been able to cast his baneful influence over architecture for more than four hundred years is one of the tragedies of history. By a mere chance his book alone, of all the ancient works on architecture, survived, and by this stroke of fortune he achieved fame beyond anything which he could have pictured in his wildest dreams. For more than four hundred years his theories have dominated architecture, so that to-day, in every architectural school on earth, his false module is accepted as the standard in teaching the student.

Now after nearly 1800 years he stands condemned by the testimony of the very buildings the method of whose design he pretended to describe. Although his book has done inestimable harm, parts of it are, as we have said, of great value, for they transmit some knowledge of Greek methods which were common knowledge at the time it was written. The trouble has been that along with these truths he has mixed theories of his own, and the false has been accepted with the true. Architecture, so far as he could do it, has been reduced from the status of a fine art, as it was with the Greeks, to a mere mathematical formula. The ancient rules have been lost because the manner of their application was falsified, or wrongly stated. Proportions upon which nine-tenths of beauty in architecture depended have been guessed at, and the guesses in most cases have been wrong. Rhythm and harmony, the dominant characteristics of Greek art, have been relegated to the background, and ugliness has become the common characteristic of most of the constructions of man.

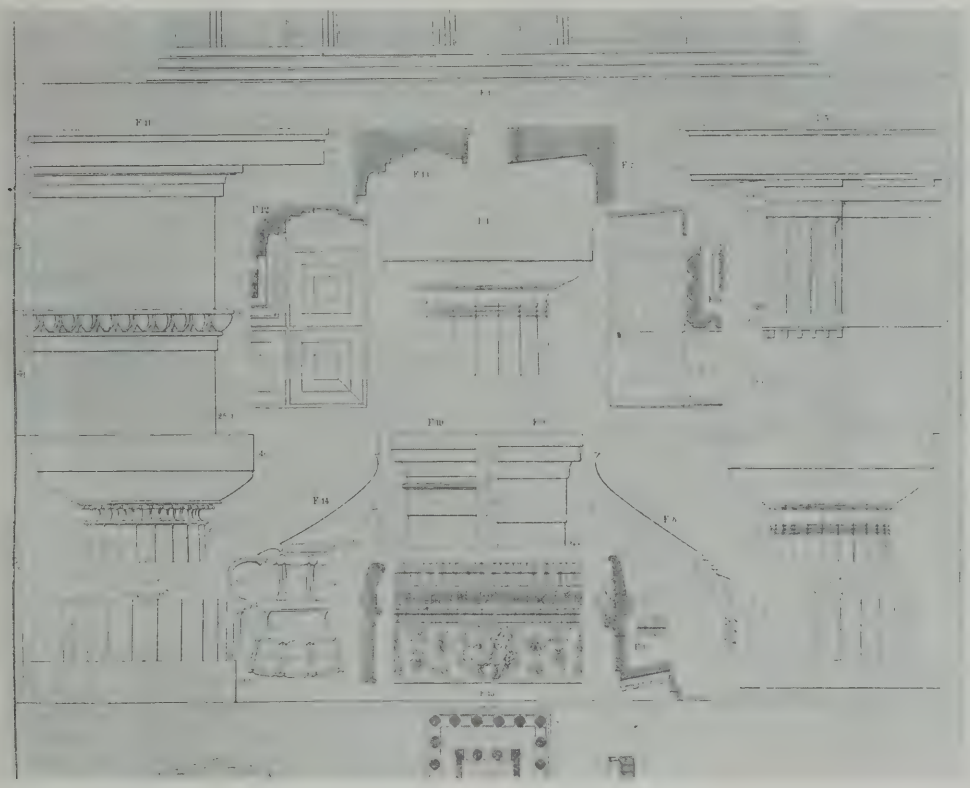


FIG. 4

The Renaissance as an Aristocratic Expression*

By W. E. VERNON CROMPTON [*F.*].

IN considering the method of approach to such a subject as this Paper deals with it is invariably found to be necessary to make some assumption which, although at first sight it may appear to be a truism passively accepted by most of us in our uncritical moments, yet upon examination is often found to be more questionable than it appeared.

I propose to start with such an assumption, namely, that civilisation expresses itself more characteristically through its art than through any other of its activities, and that of all forms of art, with the possible exception of the drama, the surest and most illuminating expression is that of architecture.

For that reason I will deal only with the architecture of the Renaissance as an aristocratic expression and leave it to others to consider it in other aspects.

As to the words aristocrat and aristocratic, I propose to adhere to their everyday use, which, when applied to government, means not necessarily government by the best but government by an exclusive section of society which, having acquired power by one means or another, is able to consolidate life in its own interest and to acquire a tradition and breeding not available for the mass of the people whose freedom is thus curtailed.

But before we proceed to discuss how such an exclusive governing body has expressed itself in architecture during the Renaissance, I venture to think it will be desirable to consider for a few moments some characteristics of the earlier medieval art.

The first of these characteristics is its *vernacular* nature. Art in medieval times was the everyday idiom through which the people at large expressed itself. There was no art of the upper classes as distinct from the lower; the art of the lord and the art of the peasant had the same natural and easy significance. It is distinctive of this medieval vernacular art that not only is its content an expression of the spirit of the times, but it attains form by means of a technique apparently so facile and inevitable that it was always understood by the people and came to them naturally as part of their everyday language.

Secondly, it was characteristic of medieval art that it was an expression of the emotions rather than the intellect—emotions kept in check and within severe limitations by the medieval Church, but having to do chiefly with the ultimate and simpler things of life—spontaneous, unsophisticated, and consequently common to all. It was an art open to everyone, yet it could not be taught as we understand teaching nowadays; in so far as you could feel you could learn, and the tradition provided the technique.

Thus to a very considerable extent medieval art was democratic in the sense that the poor man could realise himself therein equally with the rich man. There was not one art for the rich and one for the poor; medieval art was quite naturally an intuitive expression of society as a whole.

Having advanced so far, it is now pertinent to enquire how it came about that this vernacular and democratic art was displaced with such apparent ease.

The reason, I think, is to be found in the fact that medieval art—the expression of the medieval mind—was superseded because of the incompleteness of the medieval point of view. The medieval synthesis was unstable for two reasons.

Firstly, medieval thought was afraid of life as a whole, life in the fullness of all its aspects. Certain avenues of thought were forbidden as leading to perdition; there was consequently no joy in the untrammelled pursuit of knowledge as an end in itself. While there was a zeal for knowledge it was not for knowledge for its own sake, but only for the kind of knowledge that might be of use in attaining "salvation." Every intellectual pursuit in the Middle Ages was held in common subservience to this idea.

Thus the medieval attitude was a denial of all that the Greek understood by humanism. It was a scheme of thought for part of man and not for the whole. The medieval synthesis self-consciously and with intent set out to cover only a portion of our humanity, therefore of necessity contained within itself the germs of decay. In this I suggest that it differs from the Greco-Roman synthesis upon which the Renaissance was based, which, while setting out to embrace the whole of our humanity, only succeeded in doing so partially because it was ignorant and shortsighted, but being based upon a will to be all embracing it contained within itself the germs of development.

Again, the germs of the Renaissance were implicit throughout the medieval period, for we must remember that during the Middle Ages there existed an enormous mass of Greek and Latin theology, philosophy and science which only awaited discovery and mastery. It was the task of the Middle Ages to resume this heritage of knowledge, but in doing so it fed upon that which was eventually to destroy it.

The history of the Middle Ages is a history of the gradual permeation of the mind of man by this earlier wisdom which, while apprehended, was feared and which eventually blossomed into the Renaissance of

* A paper read before the Art Workers' Guild.

the humanist attitude of mind based upon a humanist scheme of values, which—as we shall see—was duly exploited by the aristocrat for his own purposes.

Intuition, which by nature is common, was gradually displaced by intellect, which by nature is exclusive. The form in which things were conceived became more and more a matter of fashion and moment, and patronage by the great arose.

I do not suggest that history presents itself so clearly cut as this. Patronage and scholarship existed under the earlier Roman Emperors and in medieval times; but, broadly speaking, the distinction holds that art previous to the birth of the Renaissance was inclusive and vernacular, growing naturally out of the life of the time; afterwards it was exclusive and aristocratic, imposed artificially upon the life of the time. The lyrical form into which intuitive feeling and even passion crystallised spontaneously and without effort in medieval vernacular art became, during the Renaissance, more and more a self-conscious and intellectual activity—a mystery that has to be acquired, and hence not purely æsthetic.

So civilisation in western Europe turned its face again towards the Mediterranean which was its cradle and school, and to symbolise this home-coming Petrarch was crowned with laurels in the Capitol at Rome and I suggest it was there that the first Fellow of the Society of Antiquaries was born.

In proceeding to consider how the various phases of the Renaissance might properly be regarded as an aristocratic expression, I propose to confine myself almost entirely to the French Renaissance, which shows in a more dictatorial and exclusive manner, although perhaps not more significantly than other phases of the Renaissance, the aristocratic influence. The Italian point of view, although more fastidious, was in essence the same as the French.

It is not without significance that Alberti—a man of noble family and of conspicuous gifts—chose the calling of architecture to which he devoted himself as a scholar and a gentleman, and architecture henceforward was to be mainly a matter of culture—intellectual and exclusive. Neither can we overlook the example set by the aristocratic patronage of the Medici at Florence. Cosmo de Medici was the patron of Michelozzo, Bunelleschi and Donatello, as well as of Masaccio and Fra Filippo Lippi.

Lorenzo de Medici—*il magnifico*—made a great collection of antiques and founded an academy in his gardens at Florence for the study of the antique; he supported and encouraged students, giving premiums for proficiency.

Leonardo da Vinci, Andrea Sansovino and Michael Angelo came from this academy, and Sandro Botticelli was Lorenzo's spoiled child. Undoubtedly the Italian aristocrat was also actuated by the desire to impose a scale of values in art which is typical of the spirit of the Renaissance.

Let us then picture to ourselves the French Renaissance in its general aspect as a kind of back cloth which, in its gradual fall, covered more and more completely as time went on all trace of the medieval scene in front of which the French aristocrat developed the plot to suit his own whim.

How did it all come about?

The spread of "the new learning which runneth all the world nowadays," as was said, was to a great extent due to the early travellers, mostly wealthy and aristocratic, who formed a continual stream from Northern Europe to Italy, being impelled by the desire for intellectual companionship and by the longing to learn at first hand what was being thought and said in the world. Whoever had keen wits and an agile mind and imagination yearned for Italy. Even the great Erasmus felt the power of Italy and was tempted to remain in Rome for ever by reason of the company he found there. He gives us a glimpse of the Venetian printing house where he and Aldus worked together, Erasmus sitting writing regardless of the noise of printers, while Aldus breathlessly reads a proof, admiring every work. "We were so busy," says Erasmus, "we had scarce time to scratch our ears."

When these travellers returned they sought to impose the ideas they had acquired upon the native craftsmen. As each new generation of artists and craftsmen was born into a classic way of thinking, the classic tradition became more and more the confirmed and natural means of expression, not only among architects, painters and sculptors, but among the lesser craftsmen even in remote country districts.

This tradition was guided and perfected by the aristocrat to the end that he might express his aspirations, whims and ideas. Art became intensely objective and set great value upon the orderly appearance of things; it was fastidious to the last degree in the choice and adaptation of form.

To this end was the French Academy founded under Richelieu, and afterwards expanded under Colbert, who created the five Academies:

1. Inscriptions and Medals.
2. Science.
3. The French Academy at Rome.
4. The Academy of Architecture.
5. The Academy of Music.

These were the instruments by means of which the French aristocracy was able to educate the artists and craftsmen whom they patronised and employed to a pitch of technical excellence of which we have little conception to-day. Students of architecture were sent to Rome or elsewhere to study, exemption from many oppressive regulations was granted to artists who showed

themselves gifted, and free quarters were reserved for them in the Louvre.

Further, the commercial side as we understand it was not neglected. Manufactures were founded and revived, there were honours and State aid for those who laboured therein; thus artistic production was fostered, so that business production and æsthetic design should not exist and develop, as invariably they do to-day, in separate idea-tight compartments. "Colbert brought the influence of the State to bear on the manufacturers through the various trade guilds: for instance, if bad cloth were produced specimens were exposed with a ticket attached giving the name of the delinquent; if the fault were repeated, the master or workman at fault was censured by the guild; in the event of a third offence the offender was tied to a post with a specimen of the faulty product tied to him."

Thus an organisation was created and controlled for the purpose of bringing art into line with the other activities of an aristocratic civilisation. Admittedly this was a second-rate ideal under which artistic imagination was stereotyped and the integrity of individual artists was weakened; but even so the work of the French Renaissance shows an excellence which is our despair to-day, as may be seen from such typical examples as the chapel at Versailles—a building not so well known as it deserves to be. It illustrates more completely than any other I know the religious mentality, and as a consequence the real mentality, of the leaders of the French Renaissance. An examination of old engravings, such as that of the east end of this chapel by Rigaud, shows us not only a Gothic idea in Renaissance clothing, but also—petrified as it were—the spiritual ideals of the French aristocracy.

The same atmosphere prevails when we turn to domestic work and gardens of the period, considering them not as they appear to-day, but as they are presented to us in their engravings by Israel Silvestre, Perelle and Rigaud. The beautiful engraving by Silvestre of the Maison de Sceaux, which belonged to Colbert, is typical of the rest: it was from such houses as these whence proceeded the will that controlled the art of the time, chiefly in France but also in North-west Europe generally. The lay-out of the garden by Le Nôtre is particularly expressive of a dominating aristocracy; such gardens, of which there were many, proclaim that there is no question as to the ownership of the earth and the fullness thereof.

It must be admitted that the orderly sweep of the design at Sceaux is very fine, but for my purpose it is more valuable as indicating a point of view than as an artistic achievement. The artificial canal mounting towards the horizon is as menacing in its reach as is the extension of the slum under our modern and more enlightened civilisation. As a whole it proclaims dominant ownership, self-conscious yet unperturbed, no matter at whose or what expense.

The old engravings of Monceaux, of the chateau and garden of Vaux le Vicomte, belonging to the notorious Fouquet of Chantilly and the Luxembourg, all strike the same exclusive note; even the beautiful and poetic Hermcycles at Nancy are in the same category, they all show the peculiar quality and mastery of design that was demanded by an aristocratic regime.

In connection with work such as this it is impossible to overlook the fact that a great period of art was produced to a very considerable extent by State organisation. The French Renaissance, which began as an affected æsthetic pose on the part of court dilettanti, became more and more a serious activity fostered and organised by the State. It is true that it was not a socialised activity run by and for the Commonwealth, but it was an activity run by the State most successfully for the benefit of an exclusive section of the community, and is a pertinent illustration of the fact forgotten or evaded to-day that the failure of a community to carry on its activities with success is not due to any inherent incapacity in a community—*quâ* community—to carry on such activities, as from the fact that except in rare cases—such as we are now discussing—no community yet has learned how to organise its activities.

Le Petit Trianon, by Gabriel, is perhaps the most consummate expression in existence of an aristocratic regime: a characteristic masterpiece, intellectual, mature, devoid of sentiment, difficult in its very simplicity—the result of a steadiness of aim through many years. In this building the architecture of the age had achieved what was required of it. Aristocracy had at length found perfect expression.

With the decline of political aristocracy towards the end of the eighteenth century a parallel decadence took place in the arts, first felt, as was natural, in the minor arts, that is, in those arts that are probably least subject to aristocratic influence and imposition. This was simply a case of cause and effect.

As the aristocratic support became weaker, as its demands became less discriminating, so do we see a falling off in scholarly design and exacting craftsmanship. This decline is to be observed more definitely in this country where no Colbert had appeared to drill the artists by means of academies, and State aid and control into a reasonable condition of complacency. Also in this country, where the aristocratic influence was naturally weaker and less organised than in France, it was submerged more easily by a plutocracy which was for the most part baneful because it had neither scholarship nor tradition: with the result that the last 150 years has witnessed the gradual loss of the accepted language of art, form and technique—at any rate as regards architecture—which was only what one might expect from an art form mainly intellectual which

had been taught from above rather than being a spontaneous development from the emotions.

On the rise of plutocracy, bringing the new ignorance in its train, the artist found himself somewhat alone in the world, regarded as a man belonging to a hierarchy apart—one who practised a more or less forgotten mystery of no special importance.

But mankind cannot do without common art : the history of all nations shows this. As soon as the aristocratic incubus was raised men began to express themselves again in the old way, especially in this country. Vernacular art revived like the weeds in a neglected garden. The factory, the suburban villa, the railway station, and the like arose as the spontaneous expression of the emotions freed from the control of an aristocracy powerless at last to dominate the situation, but they were emotions enervated by the forced hothouse conditions of the aristocratic regime, and without the support of a technique that was rapidly vanishing.

I do not wish, however, to claim too much ; other influences were at work to undermine the art of the Renaissance, chief of which was the co-related industrial revolution.

The medieval synthesis failed because it would not look life in the face. The Renaissance synthesis failed—at any rate as regards architecture—because the aristocrat, in setting out to impress the new humanist values upon his age, made the philosophic mistake of confusing quantity with quality ; in other words, he placed the old, transient humanistic forms upon an equality with the eternal humanist values, and vernacular art was smothered for something like 300 years. It must be with mixed feelings, however, that we realise that this fine yet baneful aristocratic influence is no more.

London City Churches*

BY SIR REGINALD BLOMFIELD, R.A.

As announced in *The Times* of 20 November, the Union of Benefices and Disposal of Churches (Metropolis) Measure, 1924, was passed on the 18th inst. by the Church Assembly by a very large majority. The Measure deals (1) with the redistribution of benefices, a matter with which the layman is not concerned, and (2) with the " pulling down or removal of any church," and " the sale or disposal of its site," with which all who care for our beautiful City churches are very much concerned.

The *modus operandi* for this latter purpose appears to be as follows : In the first place a Metropolitan Benefices Board is established consisting of 30 members, of whom 23 are appointed by ecclesiastical or quasi-ecclesiastical bodies and seven by lay bodies. In addition, if the church is wholly or partly within the City of London four members are to be appointed by the City Council and one by the L.C C.. Reckoning these five additional members as laymen, this gives 12 lay to 23 clerical representatives. The Bishop, having marked down his church, gives not less than one month's notice either to the Ancient Monuments Board or the Royal Fine Art Commission —it is not clear which—and to the Benefices Board. The Ancient Monuments Board may advise the Benefices Board as to the value of the building in question, and the Benefices Board may, " if in its discretion it thinks fit," advise the Bishop in regard to the recommendations of the Ancient Monuments Board ; or, on the other hand, it may put these recommendations into the waste-paper basket. After this the Bishop appoints a Commission consisting of five members to inquire into and report on the scheme. If the Commission reports to the Bishop in favour of the scheme, the Bishop may require the Ecclesiastical Commissioners to frame a scheme in accordance with the report of the Commission. Notice has to be sent to various persons and bodies named in a schedule, who shall have not less than three months within which they can appeal to the Benefices Board. If the latter body approves the scheme, the Bishop calls on the Ecclesiastical Commissioners to certify the scheme and its approval by the Bishop to the Privy Council. A final right of appeal to the Privy Council within one month is allowed, but in the face of the powerful organisation of the Benefices Board, the Bishop, and the Ecclesiastical Commissioners it seems very improbable that an appeal would be successful. If, on the other hand, the Benefices Board does not approve the scheme, the scheme is dropped for the time, but after an interval of five years the Bishop can set the ball rolling again by appointing another Commission. The destruction of City churches, which so far has proceeded in a somewhat casual manner, will, if this Measure be passed, be regularised and a very dangerous principle formally recognised.

The Measure, which was first introduced after the report of the Phillimore Commission in 1919, has been severely criticised on the general grounds that the ecclesiastical authorities have no right to regard these churches as property to be dealt with at their own discretion, and that this assumption, pushed to its logical extreme, would place at their disposal West-

* A letter published in *The Times* on 21 November.

minster Abbey and St. Paul's Cathedral, and on the particular ground that the City churches are in many cases of first-rate artistic value and endeared by long historical associations.

A conference was held at the Royal Academy in 1920, attended by representatives of that body, the Society of Antiquaries, the Royal Institute of British Architects, the Society for the Protection of Ancient Buildings, the London Society, the National Trust, the City Churches Preservation Society, the Victoria and Albert Museum, and the Metropolitan Public Gardens Association, and a memorandum was forwarded to the Bishop of London recording an emphatic protest against the destruction of the churches scheduled by the Commission. The matter was taken up again in July last, and in order to arrive at a compromise, the conference suggested that a right of veto should be given to an independent body of expert lay opinion, either the Ancient Monuments Board or the Royal Fine Art Commission. This was refused. The conference then suggested that larger representation of expert lay opinion should be given on the Board, and that in all cases of appeal the persons or body appealing should have the right to call for a report on the building from the Ancient Monuments Board or the Royal Fine Art Commission. The only result of a protracted correspondence, conducted with the utmost courtesy by Lord Hugh Cecil, appears to be the permission to one or other of those two bodies to submit its opinion to the Benefices Board. The number of lay representatives, though slightly increased, remains a hopeless minority, and whereas in the draft of the Measure in 1923 the Commission appointed by the Bishop was to consist of six members, three of whom were to be laymen, in the Measure as now approved the Commission consists of five members, of whom one shall be a layman. The ecclesiastical grip on the situation seems to be tightening. Lord Hugh Cecil honestly described the amendments made by the Committee in charge of the Measure as "slight," whereas the Bishop of London was surprised at his own moderation, and declared that he had "hardly left himself anything." The opinion of his critics is that if this Measure is passed a machinery will be provided which, in unwise or unscrupulous hands, might lead to disastrous results, and would mean that the life of no church would be safe, since their fate will pass into the hands of a body whose principal *raison d'être* is their demolition.

There may be cases of unimportant churches in which, in view of urgent public necessity, fair-minded men might feel themselves compelled to assent to demolition, but one can have no certainty that the men dealing with these matters will always be either fair-minded or aware of the value of the building in question. The Commission of 1919—of which Lord Phillimore was chairman—with the honourable exception of Lord Hugh Cecil, who declined to assent to the proposed destruction of churches and the sale of their sites, and of Mr. W. J. Collins—suggested the destruction of 19 churches, including such churches as St. Mary Woolnoth; St. Botolph, Aldgate; All Hallows, London Wall; St. Magnus, and St. Michael, Cornhill. St. Mary Woolnoth is considered by competent architectural opinion to be one of the finest buildings of its kind in London. The proposal for its destruction was carried by the casting vote of the chairman.

If the recommendations of Lord Phillimore's Commission were carried out only 30 of the parish churches surviving or rebuilt after the Great Fire would be left; and there is a widespread feeling that the safeguards provided in this Measure for the due consideration of a proposed demolition in all its bearings are quite inadequate. It is begging the question to say that the issue is between "respect for a beautiful building" and "a longing to save living souls." These buildings are a priceless legacy of the past which it is our duty to preserve for posterity. They should only be sacrificed after the fullest and most careful inquiry, and on the best advice obtainable as to their artistic and historical value. The Measure as it stands does not provide this.

Planning for Good Acoustics

DISCUSSION ON MR. HOPE BAGENAL'S PAPER (See Journal 22 November, pages 29 to 43)
(MR. HENRY M. FLETCHER, M.A. [*F.*], IN THE CHAIR)

Mr. HOPE BAGENAL: I would like to make a remark about the pronunciation of the word "acoustics." I have looked, for some time, for an authoritative statement on whether it should be pronounced "acowstics" or "acoostics." And I find that Professor Rogers Smith, who laid a paper before the Institute in December, 1860, says that it should be pronounced "acowstics" in England, "acoostics" in Scotland. I regret I have got into the habit of saying "acoostics," but I think that statement of Professor Rogers Smith should be authoritative for us here. It is a matter still open, and I hope anyone who speaks will pronounce it as he likes.

Dr. R. E. STRADLING (Director of Building Research, Department of Scientific and Industrial Research), in proposing a vote of thanks to Mr. Bagenal, said: The work which Mr. Bagenal has mentioned in connection with the Department by which I am employed is very largely the outcome of the work of Mr. Bagenal himself. It was started, in the first place, through the keenness of a previous Director, to assist the Government of India, and Mr. Bagenal has assisted us very materially during the course of the experiments. We are indebted extremely to him for the work he has put in.

I have very little to say on Mr. Bagenal's Paper itself. It is not my special line, unfortunately, and I can only say how much I have enjoyed it personally, and express on your behalf our great thanks to him.

There is just one thing I thought you would care to know in regard to further work on acoustics in connection with the Building Research Board. Mr. Bagenal has already drawn attention to the work going on at the National Physical Laboratory, under Major Tucker, and also at Harlesden directly under Mr. Barnett. All this work has a certain bearing on the architectural acoustic problem, and the Department has now called together a Committee of those interested in this special work, to take charge of and to direct the work in connection with it. This has been very much encouraged by the visits of your Science Standing Committee, in laying before the Department an idea of the great value that such work could be to the architectural profession; and, personally, I appreciate very much indeed the assistance which your Science Standing Committee has given us in that direction.

There is one other point which you may be interested in, perhaps. You may have seen, in the Press, a note with regard to the League of Nations Conference Hall, and the offer made by the British Government to be responsible for the testing of the Hall in regard to its acoustic properties. You will be interested to know that this is one of the first problems which will be placed before the new Committee on Acoustics.

I now beg to propose, formally, that the very best thanks of this meeting be given to Mr. Bagenal for his most interesting paper.

Dr. ALEX. WOOD, University Lecturer in Physics, Cambridge, in seconding the vote, said: I became interested in the problem of acoustics, as a physicist, in 1916, by reading Sabine's paper; and knowing the general fog on the subject of architectural acoustics which existed in this country, Sabine's results seemed to be among those which were too good to be true, all too simple. Some time afterwards, I got interested in a Red Cross hospital at Cambridge. A wounded sergeant of the R.A.M.C. came in, and I made the acquaintance of Mr. Bagenal. I found that he had just written a dissertation himself on this subject, and that he, too, was interested in Professor Sabine's work. We did a considerable amount of work together in the large amount of leisure which he had at that time. Mr. Bagenal, in the work he has done on this subject, has shown very considerable gifts and aptitude for the scientific study of the subject. He is not, of course, the first who has combined these qualities; Wren himself was a man who made very considerable contributions to the problems of pure physics. I feel that this problem is of such interest, not only to architects and physicists, but also to the general public, that the outlook of co-operation which has been sketched for us by the proposer of this vote of thanks is an extremely hopeful feature. I believe there are very few people who have contributed more to this development than has the lecturer to whom we have had the pleasure of listening this evening. I would like to second, with the very greatest pleasure, the vote of thanks to the lecturer for the admirable way in which he has presented the historical side of his subject.

Dr. J. W. MACKAIL: There is nothing I am competent to say on a matter of this sort, but I would like to say I have listened to the Paper with the utmost interest, and, I trust, with some intelligent appreciation. But beyond that I cannot go.

There are two quite incidental remarks I might make, if I may do so without encroaching on the time which can better be taken up with the speeches of experts. The first is, I stand clear for the pronunciation "acowstics." The second is that, as the reader of the paper is, of course, as well aware as I am, the balance of evidence is against the existence in the

purely Greek, as distinct from the Græco-Roman, theatre of that heightened platform rising 8 to 10 feet above the level of the orchestra floor, to which he alluded, and which no doubt presented in the later Græco-Roman theatre a great reinforcement of the resonating surface and resonating box behind it. But as far as the earlier Greek theatre is concerned, it seems more probable that its height above the orchestra floor was not more than three or four feet, and it was solid stone.

Mr. G. A. SUTHERLAND: As a Scotsman, and an unrepentant one, I prefer to speak of "acoostics," and in this I am supported by the New Oxford Dictionary, which gives both pronunciations, but puts "acoostics" first. It is true that the New Oxford Dictionary was edited by a Scotsman, and was published in Edinburgh, facts which, no doubt, would have been considered by Dr. Johnson deplorable, if not actually indecent. But, however that may be, I think it may be to some extent taken as a standard, and as it gives both pronunciations, we can go as we please in the matter.

I should like to add to what has been said by the mover and the seconder of the vote with regard to the contribution of Mr. Bagenal to the interest which has been forced on this subject recently. Largely owing to his stimulating enthusiasm, the work has been taken up by the Building Research Board, and architects and physicists have become interested in the problem. He has suggested that there is sufficient material now available for the use of architects if they will consult physicists. To that I assent, but I add this warning, which arises out of a remark that was made to me by an eminent architect with whom I had the privilege of working. He said: "Such and such a shape is a recognised architectural shape, and you ought to be able to tell me how to make a building of that shape good acoustically." I pointed out to him that the laws of acoustics are not made by physicists, and they are of older standing than even the oldest architectural types. It is the business of architects to design buildings in conformity with the laws of acoustics, and it is not for physicists to endeavour to alter the laws of Nature to conform to the ideas of architects. It would be impossible, for example, for a physicist to design a building which would enable Peers to be heard when their remarks are addressed to their beards rather than to the audience, and that must be borne in mind. There are certain limitations, but with that reservation I have no hesitation in acting as advertising agent of the work that has been done by Professor Sabine in America and by others in this country, and saying that there is material available, and I hope that architects will make use of it.

There is one particular service which the gentlemen who act as assessors in competitions might render in this connection. I have mentioned it before, and I understand it will bear repeating. It is, that if those gentlemen who act as assessors in competitions would lay it down that any design submitted for an audience hall must conform to a simple acoustic specification, it would be a great advance. Then designs which are impossible acoustically would be refused from the outset. It is no good designing a building and then trying to make it good acoustically. It must be done from the beginning. I do not doubt that the architectural profession is capable of rising to the occasion and designing buildings which are beautiful to look at and will still fulfil the necessary conditions and satisfy the laws of acoustic design.

Mr. Bagenal referred to the desirability of making echoes reinforce the direct sound and reach the audience as soon as possible. This is important, not only to produce extra loudness, but also to produce extra distinctness, which is what is generally lacking in the modern audience hall. The most absorbent surface in any auditorium is the audience, and the sooner we can direct the sound to that surface the more speedily will it be absorbed and the less prolongation and consequent overlapping of syllables will there be.

Mr. H. L. PATERSON [*F.*]: I should like to add my word of thanks to the lecturer. Like other architects, I have had my troubles in connection with acoustics. I designed a Nonconformist church, and the walls were plastered. The hearing was bad, but after four or five years the difficulty disappeared, and it was attributed to the drying of the walls. It may have been due to the change of minister. I should like to ask the lecturer whether the change had anything to do with the drying of the plaster.

I think a good deal has to do with the pitch of the speaker's voice. In a church which I attend often, the only man who can be heard well is the Vicar himself. Strangers, though their voices are stronger, can hardly be understood at all.

Reference has been made to Continental buildings. Is anything due to the fact that Continental speakers usually raise the voice towards the end of a sentence, whereas in England it is customary to drop it?

Mr. Bagenal spoke of domes being bad. We are now in a room with a dome, and I do not think I have ever been in a building where I have heard more clearly than here.

Dr. G. W. C. KAYE (of the National Physical Laboratory): I feel privileged to be allowed to add my personal appreciation of Mr. Bagenal's lecture.

In council rooms and meeting halls, the desire generally is to build a stately and dignified room, and it is difficult to get a dignified room which is of small dimensions. As a result, you inevitably get reverberation, unless remedies are adopted to the contrary. Incidentally the reverberation of the Gothic

church is to my mind not an unmixed evil. I have listened to sermons when I have reflected that this question of defective acoustics is one which should not be tampered with lightly !

The question of the work of the National Physical Laboratory has been referred to. The Laboratory has dealt with many phases of industry, and within the last year or two it has been decided to open an acoustics department. We have got the staff, and it is our intention, with the support of the Institute, to throw ourselves with the utmost vigour into this work, so that British architecture shall, as far as we can help it, be able to hold its own acoustically with any architecture in the world. Already in our short period of existence the questions of reverberation, of sound photography by direct means and by the ripple tank, have been attacked. We have got a Watson room for testing and measuring reflection and absorption of sound, and we are at work on various kinds of sonometers for measuring pitch intensity and quality.

Mr. MAURICE E. WEBB [*F.*] : I am not a scientist, but I would say a word as a practical architect who has recently had some experience of Mr. Bagenal's experiments. We have been building a few class-rooms, and, at Mr. Bagenal's suggestion, we covered these class-room ceilings with canvas instead of plaster, and put the Cabot quilting on the top of it. We tested the class-room before it was covered with the quilting, and the period of reverberation was four seconds, which means, according to the American theorists, that if a boy scrapes his foot on the floor, the reverberation of the noise thus made goes backwards and forwards from the floor to the ceiling 183 times before it stops. That is an absolutely impossible state of affairs for a master lecturing to a large number of boys. The result of using this Cabot quilting was that the reverberation was reduced from four seconds to one second ; and every master who goes into the class-rooms is astounded at the effect. When you go out of the corridors, which are full of noise, you enter these quiet rooms where there is no echo. Mr. Bagenal has all the credit of that. It was his suggestion, a simple, easy way of dealing with a small room with many people in it.

In great buildings and cathedrals, I think wireless and the amplifier will solve our acoustic troubles. Liverpool Cathedral people do not bother whether or not anybody can be heard from the pulpit : they have huge amplifiers hung from the ceiling, designed by Sir Gilbert Scott. A lot of troubles connected with big buildings such as the House of Commons and the House of Lords will, I think, be solved by wireless and the amplifier. We architects can do much in a lecture room like this. I think Mr. Keen has covered it with Cabot quilting. This is an easy room to hear in, and I think Mr. Bagenal's researches have resulted in making it possible for every architect to render small rooms good for sound. You do not expect a lot of echo in a small room, but you expect to be able to speak comfortably without raising your voice. In the case of a cathedral or a large council chamber, where people are bobbing up in their places every minute, you must introduce an entirely new note : you must, I think, use wireless amplifiers and electricity. I shall be glad to hear what Mr. Bagenal has to say about that.

Dr. RAYMOND UNWIN [*F.*] : In the present Assembly Hall of the League of Nations they use an amplifier. That is a problem we may have to consider in connection with acoustics. I was astonished to find that, when seated in the gallery of that hall, I had difficulty in knowing whether I was hearing direct from the speaker, or from the amplifier. I could only tell at times when certain particular notes came more harshly from the amplifier.

Mr. J. S. WILSON : There is another matter which presents possibilities. At a recent lecture Sir Walford Davies mentioned that at a large church where the organ was considerably out of tune he played a chord which, if the notes had been in tune, would have sounded very nice ; but which resulted in a bad discord. When the echoed sound came back, however, there were no discords ; the reverberations or reflections had cut out the disagreeable part or the imperfections of the chord, and it sounded right. That suggests that by the manipulation of surfaces in rooms, you might make up for imperfections of speech.

Major W. S. TUCKER [R.E. Signals Experiment Station, Woolwich] : There is one point I should like to make on Mr. Bagenal's classical allusion to the Echo. I would like to remark that, however much one appreciates echoes, one cannot regard an echo as being a true reproducer of the original note under any circumstances such as we meet with in everyday experience. There are no rooms built that will echo the same type of sound as that of the source. And the diagrams which Mr. Bagenal showed us, which are very instructive and give an approximate idea of the distribution of sound, do not give an accurate representation of what takes place, because the size of the mirrors and the length of the sound waves combine to give a return which is not exactly of the same quality as that which is put out. Although, therefore, you may use an echo and may improve the sound qualities of a room by the use of an echo (because echoes may improve on the original sound), yet it is not the same as the original ; and that fact is sometimes overlooked. We have heard reference to the wireless reproduction of sound, the pseudo-echo as it were, and I feel that so long as the loud speaker, which is part of our reproducing apparatus, is so intolerable and imperfect to the musical ear, we shall suffer to some extent by surrounding our halls by loud

speakers and by using wireless reproduction. It may be all right for following a speech and hearing what is said, but if the loud speaker is used to reproduce music, you will suffer in the quality of the music.

The point Mr. Bagenal made clearly is, that in order to get a really good sound distribution in a room you should have your speaker supplied with near mirrors, near reflecting surfaces, and the immediate environment should be of good reflecting quality. I think, also, a great deal is to be gained by making the rear and more distant walls and ceilings of the building as absorbent as possible.

I do not want to speak so much from the point of view of the audience as from the point of view of the speaker. We talk a lot about improving the room for the audience, and I think it would be well if we gave a little more attention to the speaker. There are some rooms in which it is easy to speak, and there are others in which it is difficult to speak. We can help the speaker a good deal if we can place resonators near him which will have the property of double resonance and so reduce the effort required in the production of sound. In the Greek theatre there were wooden panels, and if instead of those—for wood is a poor resonator—you could unobtrusively place rectangular boxes of different sizes, then the speaker would find that it was much easier to produce his sounds than if he had nothing but bare walls and floor near him. We can go further, making use of our knowledge of the properties of resonators. We might employ a family of trumpets, again unobtrusively placed and near the speaker. These would enable him to produce his voice much more clearly and with much greater ease than if he were provided with no resonating material.

You will notice that I am just saying now, in other words, what Mr. Bagenal said when he showed us the photographs of audience chambers where there were places for resonators and boxes. I do not consider that the use of the box as a resonator is a bad thing, or useless, but I think it is in the wrong place. I think it should be near the speaker, not away from him.

There are some rooms in which it is exceedingly difficult to speak. I should think the British Broadcasting room is a very tiring place to speak in, because of the absolute absorption of the sound by the material ; but you are near your microphone, which is your audience, and therefore the effort to speak is small and the enunciation is clear. In the Hall of the Royal Society of Arts you have a lecture room which is pleasant and easy to speak in ; and that is due to the fact that it is surrounded by great canvases which respond easily to the low-frequency sound which the voice produces. In that way, speaking there is made easy. The Royal Institution lecture theatre is notably free from reverberation, and it owes its good qualities not only to the tremendous sound-lagging of the upholstery, but it also has the quality of great quiet, being protected from the sounds of traffic outside, etc. It has been said that members of the audience at the Royal Institution, finding this restful atmosphere, compose themselves for a peaceful time during the hour's lecture. But it is a place which would ultimately be tiring to speak in, and tiring to listen in, though the reproduction of enunciation is very good.

There is another point. Mr. Bagenal has dealt to-night with the question of the audience-chamber of the theatre, of the church, and of the Houses of Parliament ; but there is one rather humbler chamber which I would like to refer to, and that is the ordinary City office. I do not suppose that the average City man, or one who occupies an office near a crowded thoroughfare, realises how much he suffers from the great disturbance caused by the noise outside. There is a perpetual conflict between the claims of ventilation and the claims of quietude. The windows must be open, and therefore the office must be in some way lagged, so that the great volume of sound from outside may be, as far as possible, absorbed. You are familiar with the comfort of sitting in a first-class railway compartment, which is heavily upholstered ; there the sound from outside coming through the open window is absorbed as quickly as it comes in. Compare that with the discomfort of talking in a third-class compartment which is only slightly upholstered. We cannot upholster the office, but recently Mr. Barnett, acting on the principle of Sabine, has produced plasters which we have had the privilege of testing. And we find that the 20 per cent. referred to by Mr. Bagenal for Sabine plasters has been exceeded, and some of our most recent specimens have got as far as 40 per cent. absorption, which is a very remarkable absorption in anything which has a good surface for the material. I think there is a great future for a plaster like that in ordinary buildings and ordinary offices, as well as in the big and more palatial places which have been referred to to-night.

Mr. P. W. BARNETT (of the Building Research Board) : This is, of course, not the first information on acoustics we have to thank Mr. Bagenal for. I would go as far as to say that, thanks largely to the lecturer and Mr. Sutherland, the problem of acoustics is now one of the simplest problems with which architects are confronted.

Mr. Bagenal has mentioned the experiments at Harlesden. Although the results obtained may be of some value, I think the chief value of this work lies in the experience it has given us of the Sabine theory in England. This will be of great assistance in the future work. He has named materials which proved to be highly absorbent, but, after all, those are only the most absorbent of the materials we have tested, and I can think of several new promising materials

which have not so many objectionable characteristics. I need only mention Balsa Wool, a timber product, and Gasbéton, a new Continental material, very porous and strong concrete, which I think will prove superior in every way to breeze concrete.

I join my thanks with those of my Director to Mr. Bagenal, for his enthusiastic help in the Harlesden experiments.

The CHAIRMAN (Mr. H. M. Fletcher) : We have had a very interesting discussion on a subject which is, I think, new to most people in this Institute. It has been gratifying to us to hear Dr. Stradling's testimony to the work of the Science Standing Committee, and it has also been pleasant to hear the testimony that all the specialist speakers have borne to the work which Mr. Bagenal hinself is doing on this subject. One of the best indications of that work is this room, in which Mr. Keen was assisted with regard to its acoustic qualities by Mr. Bagenal, and I think you will agree that the result is excellent. It has occurred to me, that if Mr. Bagenal would turn his attention to the adjoining room, which is used as a Council room, the Institute might benefit very greatly. I can assure you that the amount of wisdom that is there lost to the world, by becoming a confused booming noise, is appalling to think of ! I have no doubt Mr. Bagenal could do something to correct the defects of that room.

I was much interested in his references to the Greek theatre at Epidaurus, because nearly thirty years ago I was in it, and the acoustic properties of it are extraordinary. What they were when the theatre was in actual use we can hardly imagine. I suppose the clearness, the dryness and the thinness of the Greek air has something to do with it. I do not know whether the subject has been investigated, but there is an extraordinary difference in quality between the air of Greece and that of England, and it would be interesting if the air of an experiment room were filled with vapour and then dried. But we tested the theatre at Epidaurus by going on to the stage and speaking, while members of the party were placed in various points at the farthest portions of the auditorium. I do not remember the exact distance ; the farthest seats no longer exist, but it was over 100 feet from the stage, and the stage has no backing to it, the old Greek stage having perished. Any ordinary conversational tone could be heard perfectly. The actual author who was used for the reading, because we all knew his work and remembered it, was Edward Lear, and the special passage which was read was " The Owl and the Pussy Cat," which is very good for testing, because it is full of vowels and there are but few consonants. Not only could you hear it when delivered in a conversational tone, but also when spoken in a slow, distinct whisper, all over the theatre. But, of course, whenever we go back to the Greeks we find that they have done the thing better than anybody else.

I now put the vote of thanks to the meeting, which I am sure you will all support.

Carried by acclamation.

Mr. BAGENAL (in reply) : I thank you very much for your appreciation. Several very important points have been raised, which I would like to spend a few moments in answering, or commenting upon.

Dr. Stradling, in a very nice speech, made one point which I think is the most important that has been raised this evening : that is, the need for real co-operation between the Building Research Board and the Royal Institute, necessarily through the Science Standing Committee. To-night we have had the pleasure of meeting members of the Building Research Board here, and I think both we ourselves and they will be glad of this co-operation. We will mutually benefit by it ; and we should take not only acoustics, but all the great scientific subjects with which, as architects, we are directly in contact, and meet the experts, the physicists and the chemists in the same way.

Next is the question of archæology, and the information which Dr. Mackail was able to give me, which is very important and very interesting. I would say that it is often exceedingly difficult to get the sort of facts which Dr. Mackail mentioned, from works on archæology. I think I was right in saying that the logeion of the theatres at Epidaurus and Priene was 10 or 12 feet high ? (Dr. Mackail : Yes ; it is a question of the date of the existing stage.)

The next matter was Mr. Sutherland's speech. The point about scientific designing I will answer at the end.

A speaker mentioned drying out of plaster, which is an important point. I cannot give definite information upon it. It is one of the points on which direct experiment and acoustic research will be able to give the answer soon. The same speaker mentioned the question of dropping the voice in the last word of a sentence here, while in other countries this last word is stressed. That whole question of speaking properly is, of course, a problem by itself. I have frequently come across the difficulties raised by an imperfect use of the powers of speech that God has given us. A proper enunciation can get over at least 50 per cent. of the difficulties in acoustics ; but people must remember that the unit of sound in speech is not the word, but the syllable. If you want to speak slowly, it is not your words, but your syllables which must be slow.

The same speaker mentioned the problem of the dome, and drew attention to this dome. This dome was considered very carefully by Mr. Keen, and he asked me to analyse it and report upon it from his designs. I worked out the reflected paths from it, and since none of them gave any considerable long reflection or echo, I left it entirely to Mr. Keen to decide whether

he would have the dome, or not. There was no danger connected with it. The problem in domes and in barrel vaults is when you get above a certain dimension.

Mr. Webb brought out the importance of ceilings for school rooms. It is most important that when we use, as architects, these patent plasters, and patent floors for cleanliness, as it is necessary that we should in many cases, we should remember that the effect of doing it is to produce reverberation. In the ordinary way a room the size of a class-room could be improved by having a carpet on the floor. If you do not put it on the floor, you must put it on the ceiling, and it is more efficient there, because the rays of sound strike the ceiling at a wider angle than they strike the floor.

Mr. Maurice Webb also referred to amplifiers, which I had not mentioned. I have an open mind about amplifiers. Amplifiers are going to be specially tested at Westminster Abbey next month. The point to remember about amplifiers is that they will increase loudness, but they will not make for distinctness ; that is to say, you will not get round your reverberation problem by increasing loudness ; in fact, you thereby make your reverberation problem more acute. If, therefore, amplifiers are used in a church or in a room, it is not good to have a few loud speakers ; what you want is a number of little whispering voices along the pews, so that the voice of the preacher will be whispered low into your ear. If you put your speaker's voice all over the surface of the floor, speaking low, you would be able to hear perfectly. That is the method, in my opinion, in which amplifying within doors should be developed. Out of doors, where there is no reverberation, you can have as loud a speaker as you like ; but indoors, if you have a loud speaker you only increase the reverberation.

Dr. Raymond Unwin, in what he said about hearing in the League of Nations Hall, drew attention to a difficulty. To make a room a good instrument for sound, you want comfort, you do not want unpleasant vibrations or an unpleasant tone, even if you can hear properly. Amplifiers should give some humanity of tone or they will not become popular.

Major Tucker opened the problem of selective absorption, which is a most interesting and most difficult problem, and one which I have not touched upon. It is perfectly true that tones are modified when they are reflected. Any organ builder will tell you that, and will give you much interesting observations upon it. Every organ installed must be a special organ, specially designed for the room or the hall in which it is to be placed. The reason for that is, that all reflecting surfaces absorb selectively, and therefore alter overtones and change the whole quality of the sound. But, there again, selective absorption is a whole field that requires research, and one that Dr. Stradling, Dr. Kaye and Major Tucker have before them.

The question of office noises is also most important. We, as architects, I think, should remember when we are building in London, that site values, as far as acoustics are concerned, are continually changing ; buildings that to-day are perhaps silent may, by diversion of traffic, become very noisy, and we have got to keep noises out by means of really good rigid windows. And, as Major Tucker pointed out, the ventilation problem has got to go with the acoustic problem, because it is of no use closing your windows, making themof $\frac{1}{4}$-in. plate glass and in rigid iron frames to exclude sound, and putting underneath them an air intake, because the sound will come through that air intake. The exclusion of sound must be, I think, very largely a problem of planning. We have got to plan our chambers and board-rooms and committee rooms on internal courts if possible, or with top lights. Acoustic difficulties could often be got round in that way.

Mr. Sutherland referred to the question of designing scientifically. I feel, as an architect, not as a specialist, that I owe an apology to you for increasing the complexity of modern planning. We have already so many factors to resolve that it is a terrible thing to add yet another. But I believe, and I think a great many of us believe, that all scientific material must be used by architects, and that all scientific material can be used for an end that is ultimately artistic. I thank you for listening to me, I think rather in that spirit.

The Society for the Protection of Ancient Buildings

FORTY-SEVENTH ANNUAL REPORT.

BY F. R. HIORNS [*F.*].

WE are reminded by this Report that the Society for the Protection of Ancient Buildings is now approaching a half-century of existence. At the present time, when both architects and the general public have more sound ideas on the correct treatment of old buildings, it is difficult to realise conditions that, in the mid-Victorian era, led to the formation of the Society. Forty years before that event, for example, A. W. Pugin was placing on record enormities that, it seems, were then commonly perpetrated in parish churches wherever a town or district happened to be rich enough to bear the expense. He speaks somewhat bitterly of " each ignorant shopkeeper as he attained the office of warden enriching his pockets at the expense of the ancient fabrics " ; of how, in the process, carved and painted timbers of roofs with their massive coverings of lead were removed and flat-pitched slated roofs substituted ; galleries being needlessly and unsuitably introduced ; painters employed to marble and grain oak work ; that often the latter, in the form of splendid pews, pulpits and panelling, was pulled away and replaced by characterless substitutes ; that the old stained glass windows were replaced by " neat and uniform lights " of the period ; old pavement by new, and so on—while, to complete the transformation, smiths were brought in to line the walls with stove piping and to set up a host of cast-iron furnaces. In such manner, combined with many structural changes, and the grafting of much new work on old, were our mediæval and other churches " restored " under what seemed the settled and determined policy of the period. In fact, poverty alone secured preservation of such works in the form, and with the original finishings, in which they had been handed down. We are, accordingly, not surprised to find the *Church Builder* for the year 1875 recording with satisfaction that Wren's Church of St. Michael's, Cornhill, had, under the charge of a distinguished architect, been entirely restored (the cloister being rebuilt), and its interior so embellished that it had become " without exception one of the most imposing churches of the City of London as regards interior decoration " ; and, incidentally, it may be added, had ceased to be recognisable as a church of the Wren period. What happened to ecclesiastical structures was repeated in modified ways in the case of ancient civic and domestic buildings, which—as even happens to-day in a lessened degree—were sometimes entirely destroyed.

Associated with this brief looking-back upon the scant respect paid to old buildings a half-century and more ago, it seems fair to assume that the present generally improved outlook in such matters is largely due to the work and influence of the Society whose latest Annual Report is now before us. Its aim is still, as William Morris, its founder and first secretary, stated it to be, " to turn public attention to the intrinsic value of our ancient buildings and the grievous loss incurred by their destruction, and to teach how much that value, both artistic and historical, depends on their being preserved in a genuine condition." It is in accord with such a belief that the work of the Society has developed and continued in two main directions—seeking to preserve whatever was of value in the building art of the past, and, as a natural consequence, advocating, and showing the way to bring about the minimum of change in the original work when conservation became a necessity. The consistent and sympathetic pursuit by the Society of its purpose has, one feels, met with no small measure of success and earned the gratitude of those who regard buildings as the most valuable among the visible records of our history, and vital evidence—in most cases—of excellence in craft processes. The Society may well, therefore, be regarded in the light of a useful ally of the Royal Institute.

It appears from the Report that the buildings with which the Society deals are still largely ecclesiastical, though the scope of its activities seems wide enough to cover every type of structure of, say, more than a century old—from a fragment of Roman walling to a Georgian cottage, or a rural barn to a cathedral. It would appear, too, that no appeal for guidance or advice is made to the Society in vain on the part of owners, members of the public, or, indeed, architects in respect of cases in which they may be interested. Of these over 300 are referred to in the Report as having been considered last year—including, among the more important, the London City churches, the sixteenth century Courthouse at Barking (now, alas, no more), and several bridges imperilled by recent transport activities. And it is pleasant to notice that the Society's advice is being increasingly sought and acted upon by public bodies, official departments and private persons. We seem, indeed—despite much that still occurs that is regrettable—to be getting nearer the point of view of John Ruskin (one of the Society's original committee), when he delivered himself of the dictum that " Life without industry is guilt, and industry without art is brutality ; and for the words ' good ' and 'wicked ' used of men you may also substitute the words

'makers' or 'destroyers.'" For it is clear that until we show a scrupulous respect for the fine things of the past, those that we may be hoping to see produced in the present or the future cannot be regarded as safe.

Review

A HISTORY OF ARCHITECTURE ON THE COMPARATIVE METHOD. FOR STUDENTS, CRAFTSMEN AND AMATEURS. *By Sir Banister Fletcher. Seventh Edition. B. T. Batsford, Ltd.*, 1924. £2 2*s. net.*

The new edition of this work can be regarded as an authoritative compendium dealing with the history of building from the earliest times to the present day. In part it is a legacy of the Victorian manner of compilation which was initiated by Gwilt and continued by Fergusson. Unlike either of these books, it has the merit of dealing with facts and brings into its pages statements reflecting the researches of historians in every part of the world. Such a book needed skill and patience in its compilation; there was no space for idle speculation or wanton theory. It is apparent to the reviewer that the author has spared no pains, and it is significant that he has condensed his material into less than a thousand pages. While the majority of architects who are also historians have been content to select an especial phase or period for analytical study, Sir Banister Fletcher has given years to the making of a manual which deals with the history of architecture practically all over the world. A book of this character demands for its production close acquaintance with the vast number of old and new books, native and foreign, which deal at length with the story of building in every country. Most architects for their own satisfaction have through years of study formulated their views by means of independent research and have constructed empirically a mental picture of the evolution of building. It is, however, by means of such a book as the one under review that the clearest idea of the relation of the branches of the art in different countries can be gained. The author goes into the question of root causes; he analyses the various styles and gives at the end of each chapter a list of reference books. Both Gwilt and Fergusson worked at a time when precise information of the past was difficult of access. Gwilt's work was in the nature of an encyclopædia which could not be mastered even in a succession of readings. Fergusson's work, on the other hand, while providing entertainment was largely hypothetical.

The duty of a reviewer is to read and study the work of an author; in other words, to decant the information contained in the book for the benefit of the general reader. It is a task that to a large extent demands sympathy with the purpose the author has in mind. In the present edition the author has dealt systematically with the true literature of civilization, and through his labours lightens the studies of others. The numerous plates of illustrations, culled from all available sources, supplement the text in the most helpful way in spite of the fact of excessive reduction from the size of the originals. In vain have the pages been searched for gaps in the sequence of historical events. There is something of the precise working of dimensional masonry in the gradual building up of the work, a sure process which has been effected without the aid of cramps or mortar, the volume of material alone and its broad bearing ensuring stability. This is not a compilation that could have been undertaken from an easy chair. As the author states, he has travelled from Troy to modern Chicago. He has journeyed in Egypt, to Crete, Asia Minor, and the mainland of Greece. His travels have led him to Dalmatia and the whole of Italy, also to Tebessa and Carthage in North Africa. He has laid siege to Santa Sophia, and in Palestine knows the caravan routes from Jerusalem to Damascus. None of the secrets of European architecture is hidden from his sight. Few architects have had such opportunities and, as was to be expected, he makes his statements at first hand. The now historical styles of India, China, and Japan alone seem to have been outside his ken, but, nothing daunted, he has written about them and spared no effort to add representative illustrations of these essentially Far Eastern types.

Sir Banister Fletcher has confined his work to concise statements; he does not make heavy going in his writing; neither does he attempt more than to explain "that architecture is at once the reflection and the exponent of the period of which it is the product."

A. E. Richardson [*F.*].

Correspondence

HOUSING.

27 *November* 1924.

To the Editor, Journal R.I.B.A.,—

Sir,—I was quite pleased to see the letter of Mr. James Ransome, on "Housing," which appeared in the Journal of November 22nd, 1924.

Practically it amounts to this: that the influence of Trades Union leaders has resulted in that organised idleness (in other words, "ca-canny" and tyranny) which has led, and continues to lead, to the enormous extra cost of building houses, which cannot be let at economic rents.

I have written and said over and over again during the last few years, that no improvement whatever can be expected in the building trade until the repeal of the Trade Disputes Act of 1906 is effected.

If architects will kindly read that Act, particularly paragraph 2 (1), headed "Peaceful picketing," they will then see that that apparently innocent para-

graph has enabled tyranny of the worst description to be exercised without any real interference on the part of those whose duties should have led them to stop the outrages.—Yours faithfully,

WM. WOODWARD [*F.*].

PLANNING FOR GOOD ACOUSTICS.

34, *Bedford Square, W.C.*1.
28 *November* 1924.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—Owing to a mistake, for which I am myself responsible, in revising the proofs of " Planning for Good Acoustics," the three contributing factors to the good acoustics of the Greek theatre are given incorrectly in some of the copies of the last issue of the JOURNAL. They should read as follows :—

(1) The sound was intensified near the source by a number of useful reflections.

(2) The sound had a clear passage from speaker to listener and reached the listener at a wide angle.

(3) There were no long reflected paths of sound back from audience to stage.—Yours sincerely,

HOPE BAGENAL [*A.*].

DECAY IN BUILDING STONE.

BY W. A. FORSYTH [*F.*].

Professor Laurie's latest contribution to the JOURNAL on the subject of decay in building stone is extremely valuable to those who have the care of ancient buildings and the responsibility of erecting new ones. I am no chemist and therefore shall not attempt to supplement anything that he says. I write, however, to suggest that architects should in most cases use copper instead of lead for flashings and coverings to stonework, as I find, after long observation, that rainwater which has run over copper or other metals of which copper forms the basis never destroys limestone, but possesses some mysterious yet remarkable preservative quality.

As evidence of this, let me quote a few instances. Below the unpainted copper clock dial on a church tower the stonework is invariably in good preservation, although slightly discoloured. Where copper wire guards protect church windows the stone sills are usually in perfect order, and although previously worn away before the guards were fixed, the stone is preserved in excellent, although weathered, condition, by the tinted wash.

On stone slated houses, the mosses and lichens which cover the roofs are killed by the drippings from copper telephone wires and the slates preserved in such a way as to indicate the course of the wires across the village.

The parapet of a large Georgian house now being repaired has a Portland stone flat coping slightly weathered towards its own roofs. Set in the middle of this coping is a copper tape lightning conductor carried around the whole house. The outer half of this coping has perished, but the inner portion, affected by the copper wash from the conductor, is in perfect preservation and shows every sign of remaining so.

The sill of a fourteenth century limestone bellcot was perishing until a modern bell was installed ; the drip from the bell has arrested decay and appears to have set up permanent preservation.

At a well-known cathedral, some exposed Purbeck marble shafts are crumbling, but in places where the shafts are secured by brass clips the marble is immune from the attacks of weather and remains intact.

The splendid condition of the base of the Charles I statue in Trafalgar Square is perhaps attributable to the preservative qualities of the stained wash from the bronze equestrian figure.

As a more recent example, the Gladstone monument at the Law Courts has a Portland stone base. In places where the green discolouration is seen, it will be found that the sharp arrises of the mouldings are in perfect preservation, whereas those on the same exposure which have escaped the bronze wash are already slightly weathered.

At a recent meeting of the Chemical Society it was stated that the London County Council was investigating means to remove these green stains from the Portland stone monuments of London. My own view is that if the beneficial operation of these stains is interfered with, structural decay will be promoted.

One of the chief properties of this copper wash is its destructive effect upon mosses and other vegetation which develop so freely upon limestone and most other building materials under certain climatic conditions ; but the preservative effect of the wash is even more remarkable. These growths must tend to retard evaporation and therefore prevent the passage of sulphate of lime to the surface of the stone, which Professor Laurie contends is essential to the decrystallisation of lime.

It is imperative that all limestones and calcareous sandstones should remain absorbent or porous after receiving liquid chemical surface treatment. I find that silicon ester fulfils this condition, although I have always been doubtful of silica as the basis of such preservative. I have lately used silicon ester in the treatment of surface erosion due to structural weakness in ordinary limestones and more especially ferruginous limestones with, I hope, success. I am also using sheet copper in modern stone buildings for covering cornices, stringcourses and other exposed parts, encouraging the wash to run upon the ordinary surfaces.

Can chemists throw any light upon the preserving operation of copper wash upon limestone and can a colourless solution be produced having properties of the kind above referred to ?

BRICKS FOR HOUSES.

Sir E. Owen Williams, the Principal Engineer to the British Empire Exhibition, contributes to *The Times* for 22 November, an interesting article in which he advocates the restriction of brickwork solely to house building and of concrete to industrial building, in order to meet the present difficulty with regard to the construction of houses. He points out that the report of Mr. Wheatley's committee of employers and employees shows clearly the distribution of the efforts of the bricklaying industry as a whole. It shows, he says, that there are in England and Wales nearly 60,000 bricklayers, and that of these during the last twelve months not more than 15,000 have been engaged on house building, although it is commonly imagined that the greater number of bricklayers are so employed, from which springs the desire to find a substitute for bricks in house building. It is apparent from the figures that a substitute for bricks in industrial building would give much greater relief than can be expected from an alternative to bricks in housing. There are cogent reasons, according to Sir Owen, why it would be easier to supplant the 75 per cent. of bricks outside housing rather than the 25 per cent. employed in housing.

"A material and the uses to which it is applied," he proceeds, "grow together. Houses as we know them to-day have been developed side by side with bricks, and with them the domestic customs of the country. Bricks, houses, customs are a partnership. When one is changed all are disturbed, and this is the fundamental difficulty.

"To imagine what houses built of another material such as concrete would look like we must think of a world accustomed to concrete before bricks. The methods of manufacture and the peculiarities of the material would have stamped the house with forms peculiar to the material, and who can say what kind of house this would be? It seems certain that it would not in any way resemble a present-day brick house, but it would not be less beautiful, because it would be the true development of a material.

"Side by side with concrete houses would have grown up different domestic habits. Human beings have been accustomed to the present forms of domestic architecture, and the use of concrete for housing as it should be used involves something far greater than the mere transposition of the construction from one material to another. It may mean a far-reaching change in the social life of the country. . . . . .

"Concrete is a contemporary of the industrial era. That era has called for buildings little thought of 100 years ago. Factories and "skyscrapers" make demands in strength and height which must be satisfied economically. Steel ships are deeper drought ships; deeper ships demand deeper wharves and docks. Mechanical road transport by its increased weight and intensity demands stronger bridges and longer spans. Nature provided concrete for these new calls on the constructive industry. To use concrete for modern structures is to put it to its natural use. To use bricks for such structures more often is as great a distortion of the material as the use of concrete as a substitute for brick in houses."

"It is a common experience," Sir Owen states, "to hear that in America concrete is being largely used for houses. While that is true, the percentage of houses built of this material must be very small. It is used in America for viaducts, bridges, and industrial buildings, for which we in this land commonly and backwardly still use bricks. An example of this is the railway viaduct carrying the extension of the Golders Green tube. This case is not given because it is peculiar, but as typical of the present-day attitude towards concrete. In this viaduct there are enough bricks in every three yards of railway to build a house—*i.e.*, a mile of railway has used up bricks sufficient for 600 houses. The railway is extended to open up new districts, but in its construction it swallows up the very means for such development. When such things as these are tolerated, it is anomalous to experiment with steel and concrete houses. It would obviously be better to build houses with the bricks, and the viaduct with steel or concrete.

"There are fundamental economic differences between concrete and brickwork. An 18 in. brick wall is practically twice as expensive as a 9 in. wall. An 18 in. concrete wall is only 50 per cent. dearer than a 9 in. concrete wall, this disproportion being due to the fact that the timber moulds are the same whatever the thickness of the concrete wall. This indicates that brick is useful for comparatively thin walls, concrete having its advantages in thicker and more massive constructions. Concrete walls are cheaper than brick walls when the thickness is more than 9 in., and dearer when the thickness is less. It follows that for houses where thicknesses of 9 in. and less predominate, bricks are at present the economical material, but for heavier constructions concrete has the field.

"To what extent can the use of concrete be economically increased in brick houses without affecting their appearance? If concrete were substituted for bricks in the work below the damp-course level of a brick house, approximately 12½ per cent. of the bricks would be saved, and the appearance would remain unchanged. This would mean an additional brick house for every eight houses built, or 5,000 more houses on last year's production.

"Plain concrete may not in the majority of cases give the same economy as reinforced concrete, but it is certain that if plain concrete were substituted for brickwork, dimension for dimension, it would, besides giving relief to the industry, be economical for walls and piers of dimensions greater than one foot. The significance of this is that expert knowledge of reinforced concrete for one reason or another not being available, designs may be in brick dimensions, and plain concrete may simply be substituted for bricks in the work. This eliminates the objection that restriction of bricks would, by revolutionary changes in design, hamper industrial building.

"The considerations I have advanced would point to a considerable relief to the bricklaying difficulty if:—

1. Concrete were used up to the damp-course level in all houses.
2. Brickwork were restricted solely to domestic architecture, or elsewhere in walls not exceeding 9 in. thick."

Architectural Copyright

The Practice Standing Committee recently put certain questions to counsel relative to an architect's copyright in his plans. The opinion of counsel has now been received and is printed below, together with the questions put, for the information of members.

Questions to Counsel.

1. Whether it is possible for the guidance of the profession to lay down any general principle or principles as to the protection afforded to architects under the Act, and particularly as to the Copyright (if any) subsisting in plain designs for a Factory, Warehouse or other commercial building or in the designs for Housing Schemes as mentioned in the body of these instructions.

2. As to the legal construction and effect of Clause (*h*) of the R.I.B.A. Scale of Professional Charges.

3. As to the position of competitors for architectural competitions in the circumstances mentioned above.

4. As to the exact limitation of action imposed by section 10 of the Act and the remedy (if any) of the architect who finds that his plans have been reproduced and copied by the Local Authority without his knowledge after a lapse of more than three years.

5. As to the position of architects who have had unauthorised photographs or drawings of buildings designed by them reproduced without authority or acknowledgment.

Counsel's Opinion.

1. Under the previous Copyright Acts there was unquestionably copyright in an architect's drawings and plans, and it is not to be presumed that the present Act has in any way restricted the scope of such copyright.

The present Act purports to extend copyright in two directions. The content of copyright is larger. It is no longer confined to the mere right of making " copies " ; it is the right to produce or reproduce the work in any material form. The subject matter of copyright is extended by the inclusion *inter alia* of a work of architecture in the definition of " artistic work " The new definition of the content of copyright would alone have been sufficient to give the architect full protection inasmuch as the construction of a building from his plans would have been a reproduction of his work in material form. *Qua* copyright in the plans there is no express restriction which would limit that protection to their artistic character or design. The difficulty, however, arises from the introduction of an " architectural work of art " as a distinct subject matter of copyright and the restriction of the protection given to such work to its artistic character and design. If the meaning of that is that the architect's plans are now to be protected not as such but merely as containing *in gremio* an architectural work, then the Act would seem on the one hand to extend the architect's protection by giving him what he did not before possess, i.e., the exclusive right of constructing a building in accordance with his plans, but on the other hand to cut down his protection by restricting the exclusive right which he had under the previous Acts of copying the plans as such without regard to whether or not they possessed an artistic character or design.

If, however, the plans and the building may be regarded as separate subject matters of copyright this would preserve to the architect an absolute protection in his plans as such, and yet limit his protection in so far as construction of a building from them is concerned to the artistic character or design of the building. In my opinion the latter is the proper construction of these very difficult provisions of the Act. The Act does, I think, by necessary implication from the limitation on the protection given to " architectural work," cut down the copyright in the plan in so far as it contains *in gremio* the architectural work itself, while at the same time preserving the absolute protection in the plan as a drawing or plan of the architectural work.

In my opinion, therefore, the copyright in an architect's plans is absolute *qua* plans and any copying of the plans is an infringement without regard to their artistic character and design. It is no infringement, however, to use the architect's plans for the construction of a building unless the building produced from the plans has an artistic character or design. Plans prepared for the construction, say, of a factory upon purely scientific lines and without any regard to artistic proportions cannot in my opinion be copied without the consent of the architect.

On the other hand anyone lawfully in possession of such plans or of authorised copies of them may, unless bound by some express or implied contract with the architect, construct a building from them without the consent of or payment of remuneration to the architect. If, however, there is some original artistic character or design in the building which is contained *in gremio* of the plans, then the architect may obtain an injunction to restrain their use for such construction, or if the construction has been commenced, recover adequate remuneration as damages for infringement of his copyright.

What is to be deemed an artistic character or design is a question which would fall to be decided upon expert evidence given by architects or other artists. I should say that the cottages to be built from the plans which accompany these instructions do possess sufficient artistic character or design to entitle them to copyright as architectural words and the architect would, therefore, be accorded full protection.

2. The condition (*h*) in the Scale of Professional Charges does not in my opinion give the architect any copyright other than that conferred by the Act. *Prima facie*, however, there must, I think, be an implied term in the contract of employment that if the plans are used at any time for the construction of any building the architect shall be employed as such and paid upon the appropriate scale of remuneration. This term would be implied even although there was no artistic character or design in the work.

3. In the case of plans submitted under an architectural competition, I think there is clearly a contract that if the architect's design is selected either then or at any future time for the construction of the proposed building he shall be employed and paid in accordance with the R.I.B.A. Scale of Charges. The provisions of

sect. 10 of the Copyright Act do not affect the architect's rights under his contract.

It may of course be that an architect either in the case of a competition or otherwise may be precluded from relying on contract by reason of the provisions of sect. 174 of the Public Health Act, 1875, if the local authority is an urban authority and the contract is not under seal and involves a payment exceeding £50—see *Nixon* v. *Erith Urban District Council*, 1924, W.N. 80. In such case the architect can only rely on his copyright. If the plans have been copied or if they are of an artistic character or design and have been used for the construction of a building or buildings there is infringement of the architect's copyright in respect of which he would be entitled to sue for damages.

4. Section 10 of the Copyright Act would apply to any proceedings in respect of infringement of copyright and would bar action being taken in respect of anything done more than three years before issue of the writ. That would not, however, bar a claim in respect of any building done within the three years although operations had been commenced before the three years, nor would it bar the architect's right to demand delivery up of the plans and to an injunction against their further unauthorised use. The date of discovery of the infringement is not material. The limitation runs from the commission of the infringing act even although the architect was ignorant of the facts.

5. The Copyright Act, Section 2 (1) (iii), expressly permits the making or publishing of drawings, photographs, etc., of any architectural work of art provided they are not in the nature of architectural drawings or plans. The architect has therefore no remedy in respect of such reproductions in catalogues or trade papers and cannot complain of the omission of his name. He would, however, have a good cause for action if his designs were falsely attributed to another architect.

Temple. E. J. MacGillivray.
5 *March* 1924.

Allied Societies

THE LIVERPOOL ARCHITECTURAL SOCIETY.

PRESIDENTIAL ADDRESS OF MR. E. B. KIRBY, O.B.E., F.R.I.B.A., PRESIDENT OF THE LIVERPOOL ARCHITECTURAL SOCIETY (INC.), 4TH NOVEMBER, 1924.

HISTORY OF THE REGISTRATION MOVEMENT

Since the day on which you elected me to this office a momentous event has occurred in the architectural profession which I am confident is a source of gratification to almost every member of this Society. I refer to the reunion of the Royal Institute of British Architects with the Society of Architects. In spite of the dismal jeremiads of its opponents, I have not the slightest doubt that the accomplishment of this step will be of great and immediate advantage to the profession as a whole and that its ultimate results will elevate the practice and prestige of architecture to a position which it has not previously occupied in the eyes of the public. I do not question that before the end is achieved our cause will be beset with many obstructions and rebuffs. But in the long run its success has been assured for at least the next generation by the foresight, the persistence and even possibly the sacrifice of this.

I think it is important that we should be familiar with the history of this movement, and, even at the risk of being somewhat tedious, I propose to give you a brief account of the matter, especially as I believe it has never yet been fully recorded.

The idea of statutory registration for architects dates from the 'seventies, though at that time it received the support of but few leading architects. A comparatively small body of members of the Royal Institute advocated the idea, and most of their support was derived from the North of England. In the year 1884 matters were brought to an issue in the Institute. The advocates of the policy encountered so formidable an opposition that they decided that the only hope of progress in this direction lay in the foundation of an independent Society pledged to their programme. The result was the Society of Architects, which was formed in that year with the avowed object of attaining statutory registration. Henceforth their propaganda was conducted rather outside than inside the Royal Institute, and consequently the idea of registration came to be regarded as something alien, if not actually hostile, to that body.

It is interesting to note that the Society presented Registration Bills to Parliament in the 'eighties and 'nineties. They were, however, opposed by the Royal Institute and its Allied Societies and received no public support. Hence no progress was made.

So forlorn a hope, however, was not entirely without fruit. In the 'nineties and at the beginning of the present century the idea of registration was slowly permeating the rank and file of members of the Royal Institute, and more particularly the members of the Allied Societies, among whom it became increasingly popular. The subject was publicly discussed at Conduit Street and attracted such a degreee of support that at last, in 1903–4, the Council appointed a representative committee to examine and report on the matter. This act of twenty years ago was the first step in the present phase of the movement. While, however, this committee was still sitting and taking evidence, the more ardent supporters of the measure sought to precipitate the issue by launching an election campaign, with the result that nearly all the old Council were turned out of office and a new Council elected on a registration mandate. Events have shown that this action was probably ill-advised, inasmuch as it introduced into the Royal Institute a political cleavage which might have ended in even more serious and disruptive effects than those which we have recently experienced. The new Council proceeded to appoint a new Registration Committee, which at once began to draft a Bill. However, before this Bill could be presented to Parliament another Council election took place. The old Council was once more elected almost *en bloc*, and most of the registration leaders were turned out. But, in fact, many of those elected to the Council were in favour of the policy of registration, though opposed to the methods which had been adopted to forward it by their immediate predecessors.

The new Council once more appointed a representative Committee to consider the whole position and to draft a policy. At the same time conferences were held with the opposition with the result that it was agreed to suspend party strife and adopt a " compromise policy " which would be acceptable to all parties. This was the compromise of 1906–7 and may briefly be summarized as follows :—

(1) To extend the membership of the Institute by the admission of all properly qualified architects and

(2) To present a Registration Bill to Parliament to empower the Institute to keep a statutory register of all qualified architects.

It was designed to attain the extension of the membership by admitting to Fellowship all applicants of suitable qualifications and by admitting to a new class of Licentiates all those not qualified for the Fellowship class.

It was hoped that the members of the Society of Architects and all those members of the Allied Societies, who did not already belong to the Institute, would be absorbed in this way, that the Society of Architects would cease to exist, and that the Registration Bill would go forward with the unanimous support of a united profession. The result was, however, only partially successful. Although 200 suitable architects were elected as Fellows and more than 2,200 as Licentiates, many of the Allied Societies' members remained outside. The Society of Architects, with a few exceptions, were dissatisfied with the terms and declined to avail themselves of the offer. Thus the scheme, though of great value in rendering the Institute more widely representative of the profession, failed in its immediate object.

In 1910 it was realised that a further move would have to be made in order to secure the necessary unity for the purpose of registration. Direct negotiations were opened with the Society of Architects, and in 1911 a scheme was agreed upon by the Councils of the two bodies very similar to that which has now been adopted. The senior members of the Society of Architects were to become Fellows of the Royal Institute and the remainder Licentiates ; the Society was to be dissolved and a Registration Bill presented to Parliament. Owing, however, to faulty management and organisation, this scheme was rejected in 1912 by a vote of a general meeting of the Royal Institute.

The next two years were a period of marking time. A Committee was appointed to consider the deadlock which had been reached. There was a general feeling that all practicable means of attaining unification of the profession were exhausted and that consequently the prospects of a Registration Bill were hopeless. As a somewhat colourless alternative, a scheme was proposed for setting up a voluntary and non-statutory register to be kept by the Institute.

At this stage the war broke out and all controversial business was suspended until after the Armistice. It may not be out of place to remark in passing how disastrously the architectural profession was affected during the War by its lack of unified organisation. The Government could afford to ignore the claims of a body for which no single authority could speak. When one reflects on the unique disabilities, in comparison with other professions, which architects endured during that time, and from which many of us have not even yet entirely recovered, the moral would not seem hard to draw.

The Council elected in the Spring of 1919 at once decided that the time had come to make a fresh effort to secure unification and registration. A fully representative Committee, including members of the Society of Architects and of every Allied Society, was established and eventually a scheme was elaborated and unanimously accepted by the Committee for admitting into the Royal Institute every qualified architect in the country and then proceeding with a Bill.

The scheme was submitted to every class of members and to every Society affected by it for detailed consideration. While it was in the course of thorough examination, and before any conclusion had been reached, an election campaign on the lines of 1904–5 was suddenly organised and, mainly owing to the ignorance or apathy of the general body of the electorate regarding the issues represented by the various candidates, almost the whole of the Council were turned out of office.

The new Council, who considered they possessed a mandate to oppose the unification of the profession, proceeded to draft a Registration Bill without consultation with the other bodies concerned. A General Meeting of the Royal Institute, which some members of this Society will have little difficulty in recalling to mind, declined to approve the draft and referred it back for such consultation as had previously been ignored. As such a consultation was directly opposed to the policy of the promoters of the draft Bill, the issue was left to be decided at the next Council election, which was contested on the unification and registration issues. The result of this election, in which the Allied Societies played so notable a part, was that the present Council was elected *en bloc*, by an unprecedented majority, with a definite mandate to try to settle the question finally. The scheme of 1911 was accordingly revised, and, after friendly negotiations with the Society of Architects in which the Royal Institute had the unanimous support of the Allied Societies, an improved scheme of amalgamation was agreed to. The action of the Council was approved at the next Council election by larger majorities than ever. It is significant that by this time the members of the Allied Societies had begun to realise both their power and their responsibility in influencing the destinies of their profession instead of leaving them at the mercy of alternating factions of London architects—some of them showed a disposition to regard the Royal Institute as a select metropolitan club. Had the provincial architects appreciated their influence earlier there is little doubt that the stage at which we have now arrived would have been ante-dated by at least a decade.

The scheme of amalgamation was passed almost unanimously this year at the largest General Meeting ever held by the profession ; it was confirmed by an enormous majority in a referendum ; it was accepted unanimously by the Society of Architects, and it is now awaiting the formal approval of the Privy Council.

The details of the scheme are well known to the profession and it is unnecessary to do more than recapitulate them briefly.

The Society of Architects will cease to exist. The Fellows are to become Fellows of the Royal Institute.

The members are to become Licentiates of the Institute, and the Licentiates are to become Students. The Associates of the Institute are raised to full equality with Fellows in voting. The Licentiates of the Institute are made corporate members and given voting powers and representation on the Council. The Council is enlarged by giving a much greater representation to the Allied Societies. The voting powers of members practising outside London are improved by the establishment of a referendum system. A Registration Bill is to be drafted at once and presented to Parliament until it becomes law. Members of the Royal Institute are to be entitled to call themselves " Chartered Architects."

This is the stage at which we have now arrived. The exact form which will be taken by the Registration Bill is not finally determined. The Registration Committee is empowered to prepare what it considers the most hopeful form of draft.

From what information I have been able to obtain it seems probable that the Bill will—

(1) Give statutory sanction to the Royal Institute scale of fees.

(2) Empower the Royal Institute to establish a statutory register of all qualified architects. This register is designed to embrace (in the first instance only) every architect who is at present making a living as a *bona fide* architect regardless of membership of any Society. All members of the Royal Institution and of the Allied Societies will be automatically placed on the register in virtue of their membership.

All outside architects, if they wish to be placed on the Register, will have to make formal application, supply evidence of their qualifications and be passed by a Board of Registration.

(3) Empower the Royal Institute, after a certain date, to refuse admission to the register of anyone who has not passed the necessary examinations.

(4) Registration will not now or in the future imply membership of the Royal Institute or of any other body. That will remain voluntary on both sides.

The whole of the foregoing must not be taken as anything beyond surmise, but it seems highly probable that the Bill as presented to Parliament will be mainly on these lines. On one thing the Allied Societies are resolved, viz., that their members, whether belonging to the Institute or not, shall secure preferential treatment in any scheme of registration, in comparison with outside architects, to the utmost degree which is compatible with the probable success of the Bill. Of course I need hardly say that the ultimate terms of such a Bill depend not upon the Registration Committee, but upon Parliament. Those who have any experience regarding the introduction of such measures will be neither surprised nor unduly disappointed if the Bill is thrown out at least once. In fact, one would not be exceptionally pessimistic in anticipating that it is unlikely to become law until the third or fourth attempt. The greatest difficulty of all is to persuade the Government to find time to discuss it.

There are certain items of general interest which have occurred during my term of office and which you may think it appropriate for me to mention.

On 6 May was held the Annual Dinner of the R.I.B.A. at which the President of the L.A.S., as being the representative of the senior Allied Society, was called upon to follow the President of the R.I.B.A. in responding to the toast of the evening, viz., " The R.I.B.A. and its Allied Societies." The increasingly close relation between the R.I.B.A. and the Allied Societies was exemplified by the fact that this year, for, I believe, the first time in the history of the L.A.S., every member of its Council is also a member of the R.I.B.A.

Some time ago the Allied Societies were invited by the R.I.B.A. to reconsider and report on the existing distribution of their areas, but without any noticeable response, although it has lately been apparent at the Allied Societies' conferences that fairly general dissatisfaction exists on the subject. The anomalies which exist in our own area are particularly evident from its geographical character. Whereas its extent is considerable, reaching as it does from the Fylde to Aberystwith, the urban centres are very few and poorly distributed. The only towns of any real size are Liverpool (in which may be included the towns at the mouth of the Mersey), Chester, Warrington and Southport. It is hardly reasonable to expect isolated architects in outlying places to feel any tie to the L.A.S. or look for any advantage from its membership. On the other hand the Society cannot possibly exercise its influence on such architects as do not belong to it. We do not even know their names. In view of these facts and in order to bring our Society into some practical relation to its area, I can see no remedy except in a policy of decentralization consisting of the formation of local branches affiliated to the parent society. This has actually been inaugurated in the case of Chester, where the formation of such a branch society is practically completed.

The relations between this Society and the University School of Architecture are so close and interdependent that no explanation or apology is required in referring to them.

An invitation has been received from Professor Reilly to the effect that he would welcome the co-operation of local practising architects on the Jury for judging the series of weekly designs produced by the students. Our Council have approved the suggestion and propose to form a panel of architects for this purpose. I shall be grateful if anyone who is willing to serve would kindly give his name to the Honorary Secretary as soon as possible. The work would only involve an hour's attendance at the school at 11 o'clock on a Wednesday morning.

Now that our domestic differences are, as we all hope and trust, finally dissolved, we are left with the more natural and congenial task of devoting our energies to the great art of which we are the disciples so that its eminence and its usefulness to the best interests of the public may be more firmly established and more fully appreciated. We occupy to-day a position which is unique in architectural history. Never before has the profession enjoyed such a degree of union and strength or such unlimited possibilities for development. Whether or not we avail ourselves of these great opportunities depends mainly upon one thing, the acquisition of the corporate spirit. The ploughing of lonely furrows and the grinding of personal axes cannot contribute to the end we have in view. We must not only be content to regard ourselves as a brotherhood, but our mutual relations must be conducted in that spirit.

ARCHITECTS' BENEVOLENT SOCIETY.

Scheme of Insurance.

Architects who have not yet insured through the Architects' Benevolent Society will, it is hoped, do so at an early date, either by effecting new policies or, in the case of policies already placed, by transferring them to the agency of the Benevolent Society. The Society is in touch with most of the leading insurance companies and is in a position, with the help of an advisory committee of insurance experts, to offer advice on all insurance matters, the interest of the insured receiving special consideration in every instance. In Life Assurance the Society allows a rebate of half of the initial commission. The other half of the commission, as is the whole of the commission on policies other than Life, is retained by the Society and credited to the Fund in the published list of donors and subscribers as a contribution from the architect who has insured.

Since the Insurance Scheme first started, the sum of £100,000 has passed through the agency of the Society, which has received in commission close on £300. In addition, nearly £200 has been returned in rebate.

These figures, though encouraging, are not, it is considered, proportionate to the number of architects now practising in this country. The Architects' Benevolent Society urgently needs money ; and while appreciating the extent to which architects in the ordinary way support it with subscriptions and donations, the Society does at the same time appeal to them for their support in the effort it is now making through its Insurance Scheme to help itself. A £1,000 Life Assurance brings in £10 (half of which is returned as rebate) the first year, and £1 15*s.* 2*d.* in subsequent years ; a motor car policy for £500 brings in two guineas ; and a £1,000 Fire policy effected through the agency of the Society brings in the small amount of 2*s.* 7*d.* ; so that obviously before any real benefit is felt to the Fund, it will be necessary for a very large number of people to give their insurances.

Particulars of any kind of policy will be sent by return of post on application to the Secretary of the Benevolent Society, 9 Conduit Street, London, W. Postcards of enquiry are still coming in without signature, and any architect who has not yet received the information he asked for is requested to be good enough to forward his name and address.

THE A.A. PANTOMIME.

The title of the Architectural Association's pantomime this year is " Guffaws or the Double Elephant and Castle," which will be played in the large gallery of the R.I.B.A. on December the 17th, 18th, 19th and 20th at 8 p.m., with matinées on the 18th and 19th. It is hoped that there will be a good attendance at each performance, the pantomime no doubt providing the parodies of individuals and events which have proved so amusing in the performances of previous years. The prices of the tickets are 3/-, 5/9 and 8/6, including entertainment tax, and may be obtained from Miss Rigg, 34 Bedford Square, W.C.1. An additional reason for the success of the pantomime is that the profits will be handed over to the Architects' Benevolent Society.

TOWN PLANNING.

Extracts from the Annual Report of the Ministry of Health for 1923-1924.

That the subject of Town Planning should have been promoted to a position in which that section of the Annual Report of the Ministry of Health is published as a separate White Paper, is evidence not only of the importance attached to it by the Ministry itself, but of the widened interest now taken by Local Authorities and others. The truth of this will be readily perceived even by a casual glance at the Extracts from the Report. There were no less than 360 schemes in various stages of preparation or in operation on 31 March last covering an area of nearly 1¼ million acres. Though these figures are not unsatisfactory, the same cannot altogether be said of the progress made with schemes after the initial steps have been taken.

An apologetic note is at the outset of the Report sounded on behalf of Local Authorities on account of their preoccupation with the unemployment problem, but it is just possible that some strengthening of the central staff might assist in removing delays, for while fourteen " preliminary statements " received approval during the year under review twenty-nine were still with the Ministry under consideration. It may surprise some also to learn that not more than thirteen schemes (including one amending scheme) are at the present time in operation. These and other particulars of a statistical nature are given in a series of clearly compiled appendices to the Report which are worthy of study, especially by localArchitectural Societies, who should be alive to the opportunities which a Town Planning Scheme offers to secure, amongst other things, the preservation of objects of architectural and antiquarian interest. The Act of 1909 contemplates architectural bodies and other interested persons being consulted and it would be interesting to know how many of the Local Authorities mentioned in the Report as having schemes on hand have been approached with this object.

Those who fear the hold-up of building development pending the preparation of a scheme will note with satisfaction the determination of the Ministry to do all it can to avoid delay or hardship by means of interim development orders and safeguards against capricious decisions of a Local Authority by appeal to the Ministry. There ought, indeed, in practice to be no difficulties. Some interesting examples of decisions given on appeal are referred to in the Report.

The information as to the progress of Regional Planning is distinctly hopeful, and it is perhaps in connection with Joint Town Planning Committees that architects as a body can best use their influence and experience, as has proved to be the case at Manchester, where ninety Local Authorities are co-operating in the main features of a joint scheme. The North of England is well to the fore in this desirable method of procedure and the Midlands are almost completely covered by regional committees, but Greater London and the home counties appear to be slow in taking action. All who have to deal with Town Planning Schemes realise how essential it is to consider every aspect of them from beyond the limits of local government boundaries, but it is to be hoped that regional committees will not prolong their enquiries to such an extent as to give excuse for undue delay in the preparation of individual schemes.

Frank M. Elgood [*F.*].

Obituary

Mr. JOHN SLATER.

It is with very deep regret that we have to announce the death, on the 1 December, of Mr. John Slater, ex Vice-President R.I.B.A., after a short illness. His funeral took place at Golder's Green crematorium on the 4th. Amongst the members of the Institute at the funeral ceremony were Sir John Burnet, A.R.A., Sir Henry Tanner, Mr. H. V. Ashley, Mr. E. P. Warren, Mr. Louis Ambler, Mr. W. A. Pite, Mr. Max Clarke, Mr. H. D. Searles-Wood, Mr. W. G. Hunt, Mr. Stanley Hamp, Mr. A. Moberley and Mr. Ian MacAlister (Secretary R.I.B.A.). An obituary notice by Mr. Paul Waterhouse will be published in the next issue of the *Journal*.

THE LATE THOMAS WINDER [*Licentiate*].

Mr. Thomas Winder died in a nursing home at Plymouth on 1 May 1924. He was 67 years of age, and for about four years had lived at Thurlestone Sands, South Devon.

He was the eldest son of the late Mr. Edmund Winder, and was educated at the Sheffield Grammar School. In 1871 he entered the Duke of Norfolk's Yorkshire and Derbyshire Estates Office and there spent the whole of his professional career of nearly fifty years. In 1881 he was appointed surveyor to the Yorkshire estates of the Earl of Effingham, and in 1898 he became agent for these estates. In 1899—after the death of his father, who spent fifty-two years in the Estates Office of the Duke of Norfolk—he succeeded to the position of surveyor to the Duke's estates in Yorkshire and Derbyshire.

Mr. Winder was an Associate Member of the Institution of Civil Engineers, a Member of the Society of Architects and a Licentiate of the Royal Institute of British Architects. For many years he was a member of the Council of the Sheffield Society of Architects, and, by regular attendance and helpful counsel, rendered valuable service in promoting the interests of the members.

He carried out much architectural work upon the estates with which he was connected; he also designed and executed extensive additions to the Shrewsbury Hospital. He took a great interest in the old buildings which came under his control, and embodied some of his impressions in a lecture he gave before the Sheffield Society of Architects on 11 February 1896, upon "Local Half-timber Buildings"; he also gave the following lectures before the Society—12 March 1908, "Feudal Tenures," and 13 January 1910, "Sheffield from Early to Commonwealth Times."

Mr. Winder published a handbook upon the Sheffield Manor House, and contributed articles to various publications upon antiquarian topics. He also wrote a book upon "Farm Buildings," a subject upon which he had great practical experience. Amongst his other publications were "An Old Ecclesfield Diary," and "T'Heft an' Blades o' Shevvield," a collection of dialect stories and antiquarian papers.

He was one of the founders of the Hunter Archæological Society and served upon its Committee until he left Sheffield. He gave numerous lectures before its members and contributed articles to its "Transactions."

WALTER SHAW [*Licentiate*].

Mr. Shaw, of Northampton, died on 4 November in his 71st year. He commenced his long career in the offices of the late Edmund Law and was associated with him between twenty and thirty years. He afterwards entered into partnership with the late John Ingman, and for four or five years they were concerned as architects in a number of private residences and such public buildings as the Masonic Hall, Friendly Societies' Institute, etc. From the termination of this partnership Mr. Shaw practised alone, and in addition to domestic architecture, he was concerned in one or two large street improvement schemes, certain church restoration work, and latterly a considerable amount of surveying work on the development of new estates and as architect to new housing schemes. Mr. Shaw has left behind him a large number of sketch books devoted to ecclesiastical art.

Notes from the Minutes of the Council Meeting

NOVEMBER 17TH, 1924:

Architectural Copyright.

On the recommendation of the Practice Standing Committee it was decided to inform the Board of Trade, in reply to the Board's request for the observations of the R.I.B.A. as to the desirability or otherwise of introducing legislation for the purpose of setting up a Statutory Register of Copyright, that in the opinion of the Council it was desirable that legislation should be introduced for the purpose of setting up a Statutory Register of Copyright, provided that assurances are obtained that the rights granted under the Copyright Act of 1911 are not affected in any way.

Richmond Bridge.

Reports were received from the Art Standing Committee and the Town Planning Committee on the subject of the proposed widening of Richmond Bridge, and it was decided to take steps to call the attention of the authorities concerned to the undesirability of widening the bridge and the necessity of a broad consideration of the whole question of new bridges over the Thames outside the County of London.

British Architects' Conference, 1925.

On the recommendation of the Allied Societies' Conference, the offer of the Northern Architectural Association to organise the Conference in their province in 1925 was cordially accepted.

Housing Fees Tribunal.

The Tribunal presented its final Report on its work since its appointment in 1922, and in releasing the

Tribunal from its duties the Council passed a very cordial vote of thanks to the members of the Tribunal for their indefatigable and successful labours in the interests of the profession.

APPLICATIONS FOR MEMBERSHIP.

The applications of three candidates for the Fellowship and ten candidates for the Associateship were approved and ordered to be published in the Journal.

RESIGNATION.

The resignation of Mr. H. S. de Bertodano (Licentiate) was accepted with regret.

Notices

THE FOURTH GENERAL MEETING.

The Fourth General Meeting (Ordinary) of the Session 1924-25 will be held on Monday, 15 December, at 8 p.m., for the following purposes :—

To read the Minutes of the meeting held on 1 December 1924 ; formally to admit members attending for the first time since their election ; to nominate candidates for membership (Election 5 January 1925).

To read the following Paper : " Shop Fronts and their Treatment," by Arthur J. Davis [*F.*].

ELECTION OF MEMBERS, 2 MARCH 1925.

Associates who are eligible and desirous of transferring to the Fellowship class are reminded that if they wish to take advantage of the election to take place on the 2 March 1925, they should send the necessary nomination forms to the Secretary not later than 23 December 1924.

SURVEYING INSTRUMENTS FOR HIRE.

A member has most generously placed at the disposal of the R.I.B.A. a very good dumpy level, tripod and staff, and also a good theodolite and tripod.

These instruments being a somewhat expensive part of the equipment of an architect's office, it is felt that many members may be glad of an opportunity to get them on loan. Members or Licentiates who desire the loan of these instruments should apply to the Secretary R.I.B.A. stating for how long they will be required. A nominal fee to cover the cost of adjustment from time to time will be charged.

R.I.B.A. JOURNAL AT REDUCED RATES.

Arrangements have been made for the supply of the R.I.B.A. JOURNAL (post free) to members of the Allied Societies who are not members of the R.I.B.A. at a specially reduced subscription of 12*s.* a year. Those who wish to take advantage of this arrangement are requested to send their names to the Secretary of the R.I.B.A., 9 Conduit Street, W.1.

WARNING TO MEMBERS.

Members sending remittances by postal order for subscriptions or Institute publications are warned of the necessity of complying with Post Office Regulations with regard to this method of payment. Postal orders should be made payable to the Secretary R.I.B.A. and crossed.

Competitions

UGANDA RAILWAY NEW OFFICE, NAIROBI.

Apply to the Crown Agents for the Colonies, 4 Millbank, Westminster, S.W.1. Closing date for receiving designs, 28 February 1925. Assessor : Mr. William Dunn, F.R.I.B.A. Deposit £1 1*s.*

RECONSTRUCTION OF THE KONINGINNE BRIDGE, ROTTERDAM.

With reference to the announcement of this competition in a recent issue of the JOURNAL, His Majesty's Consul-General at Rotterdam has informed the Department of Overseas Trade that he has received from the Rotterdam municipal authorities a series of 72 questions and answers amplifying and explaining the technical points which arise in connection with the plans.

As a translation would involve considerable time and difficulty His Majesty's Consul-General suggests that any British firm desiring specific information on the subject should communicate with him direct.

BETHUNE MEMORIAL TO THE MISSING

The Imperial War Graves Commission desire Members and Licentiates of the Royal Institute to be reminded that applications to take part in the above Competition from persons other than those who had signified their intention of competing on or before 1 January 1924 cannot be considered. Due notice of this regulation was published in the Professional Press on various occasions during August and September, 1923.

MASONIC MEMORIAL COMPETITION.

Apply to The Grand Secretary, Freemasons' Hall, Great Queen Street, W.C.2. Last day for applying for conditions, 23 August 1924. Deposit, £1 1*s.* Closing date for receiving designs, 1 May 1925. Assessors : Sir Edwin Lutyens, R.A. [*F.*] (appointed by the President) ; Mr. Walter Cave [*F.*], Mr. A. Burnett Brown, F.S.I.

MANCHESTER ART GALLERY.

Apply to the Town Clerk, Town Hall, Manchester. Closing date for receiving designs, 20 January 1925. Assessors : Mr. Paul Waterhouse, F.S.A. [*F.*], Professor C. H. Reilly, O.B.E. [*F.*], Mr. Percy S. Worthington, Litt.D., F.S.A. [*F.*].

UNIVERSITY OF LONDON, UNIVERSITY COLLEGE.

ARCHITECTURE ENTRANCE SCHOLARSHIPS.

Fifteen Entrance Scholarships and Exhibitions are available for award to Students entering University College, London, in October, 1925. Two of these are tenable in the Bartlett School of Architecture. Three others are available in any faculty of the College or in the School of Architecture. Full particulars regarding all the Scholarships and Exhibitions may be obtained on application to the Secretary of the College.

Members' Column

SCHOOL OF ARCHITECTURE, UNIVERSITY OF CAMBRIDGE.

THE Board of Architectural Studies of the University are prepared to receive applications for the appointment of an Assistant to the Master of the School. Experience in architectural teaching and high professional attainment are required. The salary will be £350 per annum, exclusive of remuneration for duties performed during the Long Vacation Term, with liberty to practice, subject to the full requirements of the School.

Applications with copies of testimonials should be sent to the Secretary of the Board of Architectural Studies, Mr. Edward Bullough, Gonville and Caius College, Cambridge, before 1 January 1925. Duties will commence as soon as possible after the beginning of the Lent Term.

MESSRS. GRANT AND GOODCHILD.

MR. JOHN P. GRANT, F.R.I.B.A., of Quay Street, and the Bute Estate Office, Cardiff, has taken into partnership in his Quay Street practice Mr. W. Goodchild, A.R.I.B.A., and the firm will henceforth be known as "Grant and Goodchild."

COMMENCEMENT OF PRACTICE.

MR. HUGH P. BANKART [*A.*] has commenced practice at 1 Hare Court, Temple, E.C.4. Telephone: Cent. 3947.

COADJUTOR WANTED.

F.R.I.B.A., public school and university, with fairly good but spasmodic practice, wants to share his own or other offices with kindred spirit on principles of mutual aid.—Apply Box 9241, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

APPOINTMENT WANTED.

LICENTIATE with thorough knowledge of classic design, detail and draughtsmanship would render assistance on important competition or other work and take management of staff and work.—Apply Box 3415, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

OFFICE ACCOMMODATION.

F.R.I.B.A. offers share of his offices in good position in Westminster. For particulars apply Box No. 3124, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

Minutes III

At the Third General Meeting (Business) of the Session 1924-1925, held on Monday, 1 December 1924, at 8 p.m., Mr. J. Alfred Gotch, F.S.A., President, in the Chair.

The attendance book was signed by 7 Fellows (including 3 members of the Council) and 9 Associates.

The Minutes of the Meeting held on 17 November 1924, having been published in the JOURNAL, were taken as read, confirmed, and signed by the Chairman.

The Hon. Secretary announced the decease of the following members:—

Mr. Henry Perkin, elected Fellow 1891.
Mr. Robert Fabian Russell, elected Fellow 1887.
Mr. Arthur Herbert Belcher, elected Associate 1882.
Mr. T. Ellershaw, elected Licentiate 1911.
Also of Mr. John William Dennison, elected Associate 1864, Fellow 1871 and transferred to the list of Retired Fellows in 1899, and at the time of his decease, the oldest member on the Rolls of the R.I.B.A.

and it was RESOLVED that the regrets of the Royal Institute for the loss of these members be recorded in the minutes, and a message of sympathy and condolence be conveyed to their relatives.

The following candidates for membership were elected by show of hands:—

AS FELLOWS (20).

ARCHER-BETHAM: ARTHUR [*A.* 1920]
BIGGS: ALFRED ERNEST [*A.* 1902].
CATHCART: WILLIAM D'ARCY [*A.* 1909], Salisbury, S. Rhodesia.
CULLIFORD: LEONARD ARTHUR, F.S.I. [*A.* 1914].
DAWSON: NOEL JOHN [*A.* 1907], Alexandria, Egypt.
HAKE: GUY DONNE GORDON [*A.* 1911], Bristol.
HAYS: JOHN WILSON [*A.* 1918], Wingate, Co. Durham.
KNIGHT: EDWARD FROST [*A.* 1899], Parkstone, Dorset.
LETHBRIDGE: JAMES MORTON [*A.* 1903].
MACLENNAN: THOMAS FORBES [*A.* 1903], Edinburgh.
MURRELL: HAROLD FRANKLYN [*A.* 1906].
NOTT: GEORGE [*A.* 1907], Leicester.
OWEN: WILFRID SCOTTER, M.A., P.A.S.I. [*A.* 1912].
PIGOTT: RICHARD MOUNTFORD, M.C. [*A.* 1913].
RIPLEY: CEDRIC GURNEY [*A.* 1914], Shanghai.
SMITH: JAMES [*A.* 1906], Buenos Aires, Argentine.
THORNTON: HAROLD, B.A. [*A.* 1911], Dewsbury.
TOY: SIDNEY, F.S.A. [*A.* 1923].
WELCH: HERBERT ARTHUR [*A.* 1911].
WETENHALL: EDWARD BOX, F.S.I. [*A.* 1894].

AS ASSOCIATES (15).

BHEDWAR: CAVASJI KAIKHUSHRU [*Special Examination*], Bombay, India.
BLACKBURNE: SHIRLEY LANPHIER [*Final Examination*].
BLAKE: JOHN PATRICK, P.A.S.I. [*Special Examination*].
BRADEN: KEITH ARNOLD [*Special War Examination*].
BRIGHTIFF: CHARLES HENRY [*Final Examination*].
CAMPBELL: ARCHIBALD ALASTAIR VIVIAN [*Special Examination*].
CARELESS: SEFTON STOCKFORD [*Special Examination*].
COBB: ROBERT STANLEY, M.C. [*Special Examination*], Nairobi, Kenya Colony.
COOPER: CARILEF MILES, M.C., M.A.Oxon [*Special War Examination*].
DE BURGH: ROBERT STANLEY [*Special War Examination*], Farnham, Surrey.
EVE: CECIL GEORGE WILLIAM [*Final Examination*].
GEESON: ALFRED GODWIN [*Special Examination*], Leicester.
HODGES: ALFRED WALTER [*Final Examination*], Exeter.
REILY: ERIC [*Special Examination*], Belfast.
WILSON: JAMES MOLLISON [*Special Examination*], Dalkeith, Scotland.

AS HON. ASSOCIATES (6).

BRANGWYN: FRANK, R.A., R.P.E., Hon. R.S.A.
MACLAGAN: ERIC ROBERT DALRYMPLE, C.B.E., Director of the Victoria and Albert Museum.
SQUIRE: JOHN COLLINGS.
WALSTON: SIR CHARLES, Litt.D., L.H.D., Ph.D., Director of Fitzwilliam Museum and Slade Professor of Fine Arts, Cambridge.
WELLS: JOSEPH, M.A., Vice-Chancellor of University of Oxford.
YERBURY: FRANCIS ROWLAND.

AS HON. CORR. MEMBER (1).

OSTBERG: RAGNAR, Professor at the Royal Academy of Art, Sweden.

Mr. Francis Hooper [*F.*] moved, and Mr. H. D. Searles-Wood [*F.*] seconded, the following Resolution of which due notice had been given:

"To request the Council to consider and if thought desirable to approach the Master Builders' Association and the Building Trades Union and to offer any assistance deemed suitable in furthering the training of craft apprentices."

After several members had contributed to the discussion the Resolution was passed unanimously.

The meeting closed at 9.20 p.m.

R.I.B.A. JOURNAL.

Dates of Publication.—1924: 8th, 22nd November; 6th, 20th December. 1925: 10th, 24th January; 7th, 21st February; 7th, 21st March; 4th, 25th April; 9th, 23rd May; 13th, 27th June; 18th July; 15th August; 19th September; 17th October.

Sir Aston Webb's Retirement from the Presidency of the Royal Academy

BY SIR D. Y. CAMERON, LL.D., R.A.

THE retiral of Sir Aston Webb from the presidency of the Royal Academy, after six years of strenuous service, brings to an end a term of more than usual activity and progress. Elected unanimously, to succeed the late Sir Edward J. Poynter in 1918, shortly after the conclusion of the Great War, and at a time when old institutions required new life and a new outlook, Sir Aston entered with singularly open mind into the pressing duties and problems which awaited him. For several months previous to his election, a Committee of the Academy had been sitting in earnest consideration of much desired and essential reforms, and he, at the time treasurer, was one of its most active members, giving unstintedly of his ripe experience to the solution of questions, long pondered, long delayed. One of the outstanding results of this Reform Committee's efforts was the drafting of a law making the retiral of members incumbent at the age of seventy-five in order to accelerate promotion from associate rank, and thus ensure the senior order of membership an accession of new men in the fullness of their strength. No change of this kind can take place without removing some on whom age has left no marks, hence there have been members raised to " Senior Academician " rank though still full of activity. This new law has removed Sir Aston Webb from the Presidency, with his mental energies unabated, his understanding alert and undimmed, and his eyes still open to the new visions of a new age.

To those who have had the privilege of close intercourse and co-operation with him, it is a matter of the deepest regret that his occupancy of the chair is at an end, during the years of which his unselfish and unceasing labours have called forth love and loyalty in full measure. All those who have the highest interests of the Academy at heart, all who know its great past, and hope for its still greater future, recognise how well Sir Aston has run his race, and how wisely he has guided its affairs, when errors and false steps might so easily have occurred, and would certainly have done so under a less wary and experienced chief.

With wide knowledge of men and business, he assumed office when probably no painter (all former P.R.A.'s have been painters) would have been acceptable to the varied groups of men to be found in the Academy. In how many cases he has allured the conservative mind to light and courage, and restrained those who, forgetting for the moment the things which lay behind, were pressing on to things before—flushed with the fevered atmosphere of those after-war years and as likely to destroy as to build up! He has been a bridge across the gulf which divided men, and has held the members together in good hope and fellowship for the years to come, when the value of his presidency will be, if possible, more fully recognised.

It requires a man of many parts to infuse new blood and new ideas into old institutions, the wheels of which tend to be clogged with an unreasoning conservatism opposed to all change and the moving spirit of a new age. Sir Aston Webb possessed the progressive, catholic outlook, and has been instrumental, with the necessary help of others, in opening—as had never been previously

done—the great gates of Burlington House to men who, otherwise, would have found them for ever closed. He has not been heedless of the old sentiments and arguments of those of a former tradition, still members, but at the same time he has inclined his ear to the calls of new impulses and new outlooks, with the result that the Academy by its elections has shown a catholicity greatly to be commended, and in the view of artists established itself in a place far different from that of six years ago. New life cannot be stemmed, and the future is for the young with wings of liberty on which to rise. The President saw those movings when others failed to do so, and he apprehended those words of Disraeli, " The youth of a nation are the trustees of posterity."

In his time the Galleries have been placed at the disposal of outside societies of painters and craftsmen—at home and from the Dominions. Consequently the Academy, so long condemned and execrated as narrow and exclusive, has become the emancipated and welcoming home of all the Arts.

Observant students of the Royal Academy and countless visitors to its exhibitions have not been slow to notice the change in the hanging of pictures and placing of sculpture. No longer are the former in excess ; no longer " piled steep and massy, close and high " ; no longer is the sculpture crowded indiscriminately into inadequate space. These reforms in exhibitions have been carried out by the " hanging committees," but would have been impossible had the latter not been sustained by the zeal of the President for all concerning finer arrangement of lines and masses.

In other fields of Academy life Sir Aston has shown his hand very clearly. In response to his invitation the initial meetings of what is now known as " The Royal Commission of the Fine Arts " took place at the Academy, and he has also given time and thought to the Committee of Investigation into the questions of artists' colours and materials and the preservation of old pictures. Space forbids the recalling of all his activities during these six memorable years of his presidency, to quicken life in the Academy and bring it into fuller accord with the thought, outlook, and expectation of our time. So admirably and so wisely has he acted that most, if not all, of the acrimonious criticism levelled against every action of the Academy has ceased, and given place to more generous appreciation of its efforts to befriend the arts in general, and the administration of its great schools and charities and public responsibilities.

This is not the time or occasion to deal with Sir Aston Webb's life work in Architecture and National Services, but whoever in the future writes the history of the Royal Academy must devote a long chapter to the works of the Architect President who, throughout six of the most restless and perplexing years of our country's history, presided over its affairs with high capacity and integrity, with unfailing courtesy and impartiality, and with tireless assiduity and devotion, even when, more than once, the cloud of sickness was upon him and the shadow of trouble overtook him.

Finally, the presidency of Sir Aston Webb—the eleventh of his line—has been more marked by progress than any similar period since the Academy was founded by the King in 1768 under Sir Joshua Reynolds.

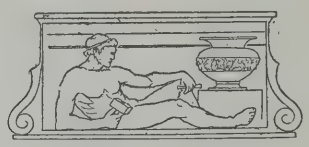


FIG. 4

When the gallery is receiving equal light from both skylights—*Pseudo-Top-Side-Lighted.* Reflections in glazed pictures on both sides very pronounced.

FIG. 5

When the skylights on the east side were closed, forming an imperfect *Modified-Top-Side-Lighted* gallery, in which the reflections of the opposite pictures were nearly obliterated in the glazed pictures on the east side.

MARLAY EXTENSION, LOOKING S.S.E., IN THE FITZWILLIAM MUSEUM, CAMBRIDGE. Messrs. Smith & Brewer, Architects

Recent Observations and Tests on the Lighting of Picture Galleries and Museums

BY S. HURST SEAGER [*F.*].

SINCE the publication of the valuable scientific tests of the National Physical Laboratory—at the instance of Sir Frank Baines—and the publication of my paper in the R.I.B.A. JOURNAL of 9 January 1923, much study has been given to this important subject, and I think it will be readily conceded that the top-side-lighted system there advocated is gaining many adherents, not only in England but also in France and America. It is extremely gratifying to find that among the younger members of the profession there are keen enthusiasts whose marked ability gives the greatest promise that in the immediate future all the art galleries and museums will be lighted in a scientific manner, and the present reproach removed. More than half the designs prepared for the Hull competition were based on this method, and among them were several of such high merit that any one of them if erected would have given distinction to any town. One gallery at the National Gallery of British Art is to be built on the top-side-light system, and it is being adopted at the old London County Hall for its conversion into picture galleries. In France, for the new gallery at St. Quentin (Fig. 7), the architect has recognised the value of the system, and is erecting one of the small rooms in accordance with the section shown. That the system appealed strongly to Lord Leverhulme is shown by the fact that after his visit to New Zealand he wrote, in reference to the Sarjeant Art Gallery at Wanganui, " I was especially pleased with the lighting of that gallery. I thought it most excellent, and exceptionally free from reflections in the pictures."

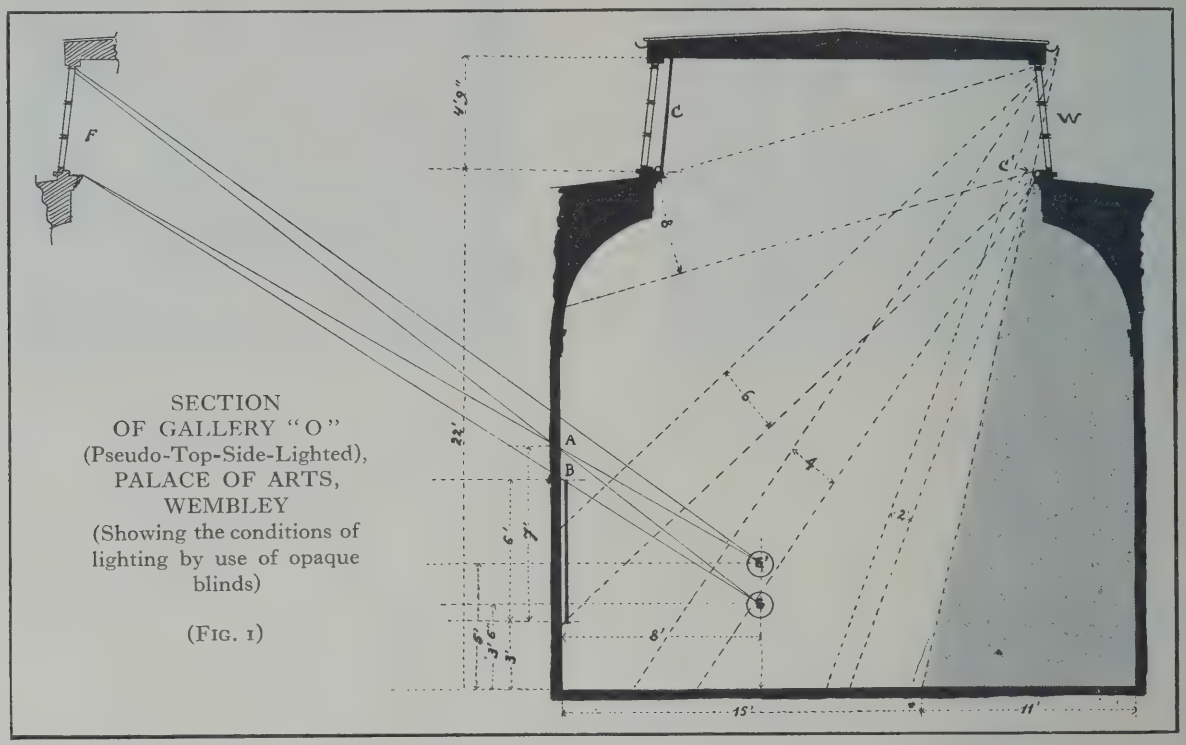
AN OPPORTUNITY TO DEPART FROM TRADITION.

The competition for the Manchester Art Gallery gives a golden opportunity to break away entirely from the fatal grip of tradition, for in the conditions it is at last acknowledged that glazed pictures can be exhibited without creating reflections—a most valuable pronouncement, showing a remarkable advance of thought. The clauses state :—

" Very careful consideration must be given to the lighting of the galleries, and in top-lighted rooms the light should be so devised that it is thrown mainly on the walls and not on the floor and so as to avoid reflections in the glass of the pictures.

" Artificial lighting should be arranged so that the source of light is as nearly as possible from the same direction as natural light and so that reflections are avoided."

The goal has been set up, but it will take a considerable amount of study, knowledge and ingenuity to reach it. All experiments strengthen the conviction that it is by the *top-side-light system* only that glazed pictures can be seen free from reflections, but this connotes that in every gallery there must be only one source of light. This source *must be invisible to the spectator* and must have its maximum light directed on to the picture wall. This " maximum light " does



SECTION
OF GALLERY "O"
(Pseudo-Top-Side-Lighted),
PALACE OF ARTS,
WEMBLEY
(Showing the conditions of lighting by use of opaque blinds)

(Fig. 1)

NOTES.

F.—Representation of the window (W), the same distance from the wall as the window itself (the visual image).
E.—The eye of spectator when sitting at a distance of 8 ft. from picture.
E¹.—Ditto, when standing.
E & E¹-F.—Imaginary rays from the eye to the visual image, marking the positions of the reflection of the window on the picture plane—(B) when sitting, (A) when standing, ∴ showing that the reflections of the window are above a 6 ft. picture when sitting and a 7 ft. picture when standing.*
C.—Opaque blind closed, shutting off bright light from the spectator and from the pictures on the opposite wall.
C¹.—Opaque blind rolled up. (When closed and C rolled up, the lighting effects are reversed.)
Therefore, in conjunction with Art Gallery glass, these blinds give complete control of lighting conditions at any time of day, independent of sun or its position.

* The reflecting surface is assumed to be vertical. If it is inclined then the reflections rise in proportion to the inclination of the picture.

The above white portion of section shows the area lighted by direct light, and the dotted lines within it show the relative amount of light upon the walls and floor. (It is clear that if both windows were exposed the direct rays would be increased on spectators and floor, but no direct light would be added to the pictures.)

The above dark portion of section shows the area lighted by reflected light only. The wall on this side would be suitable for all unglazed pictures, fabrics and decorative exhibits as seen in the gallery containing the Quest of the Holy Grail at Birmingham. The gallery might therefore have the window C permanently closed, and the exhibits throughout the gallery would be perfectly seen at all times.

not mean an intense one ; it must be capable of being regulated to range between 2 and 20 F.C.—a range to which the eye can readily adjust itself—but in every case it must be ensured that the light on the picture is the brightest light in the room.

That pictures in narrow rooms can be nearly perfectly lighted is proved by experiments made in the Wallace Collection, the Palace of Art in Wembley, and in the new narrow Gallery of the Fitzwilliam Museum at Cambridge. In all cases the reflections were reduced to such an extent by the adaptation of the translucent blinds—as shown in the diagram of Wembley (Fig. 1)—that the possibility of eliminating them altogether by the use of kaleidoscopic glass and opaque blinds is clearly demonstrated.

I emphatically plead for the adoption, wherever possible, of this most inexpensive and perfect control in all those galleries which hold, but do not adequately display, the world's masterpieces. The amenities of the gallery would not be interfered with. On the contrary, there would be a distinct gain in that the transient effect of sunlight would be secured at will. In each room one wall would always be relatively brighter than the other ; on this wall the glazed pictures would be perfectly seen quite free from the reflections which now disfigure them. In summer the east skylights would be closed in the morning and those on the west in the afternoon, but in winter, when all available light is required, this arrangement would be reversed.

Classification of Systems. (Ill. 8.)

Galleries have lately been designed and are in course of erection for which it is claimed that they are in accordance with the top-side-light system, but this name cannot be given to any system of lighting which has skylights or high windows on both sides of the room or gallery. It is true the pictures on both sides of the room would be well lighted, but the brightly illuminated walls would themselves become secondary sources of light and be reflected in the opposing pictures unless the walls are a sufficient distance apart to allow the reflections to be eliminated by tilting. In narrow rooms—all under 44 ft.—it is only the reflections in small pictures that can be eliminated in this way. It is therefore necessary to tabulate and describe the different systems.

No. 1.—*Top-side-light*, in which the one source of light—*invisible to the spectator*—is directed on to the picture wall in such a way that it is the brightest part of the room.

It may be carried out in various ways, *e.g.*—

(*A*) The corridor system, having the gallery on the one side only—as in my sketch for the St. Quentin Museum (Fig. 7), and in the 1923 paper—the left-hand side of diagrams Fig. 8 and the lower part of Fig. 10.

(*B*) With galleries on both sides of a central corridor, as in the upper part of Fig. 10, and in the Sarjeant Art Gallery, Wanganui (Fig. 1 and Illustration No. 3 in the 1923 paper). In this case the subdued light on the spectators prevents their reflections and the opposite walls are far enough apart to enable the reflections of the pictures to be obliterated by fixing the pictures on to wall surfaces inclined at exactly the necessary angle of inclination calculated for the width between the walls and the desired height of the picture line. At Wanganui the galleries are divided into bays, and the distance between the outer walls is 44 ft.—two bays of 16 ft. and a corridor of 12 ft. It should not be less.

(*C*) The corridor may be eliminated if the solid central ceiling remain (Fig. 3, 1923 paper). I have said on that diagram (reproduced from the 1912 paper) that the central space may be extended or omitted. On making experiments in galleries I find that if omitted reflections would be dominant. This section cannot be regarded as top-side-lighted unless the gallery be at least 44 feet wide as stated under B. If it is narrower, it must be placed under No. 2.

No. 2.—*Pseudo-Top-Side-Light* is certainly an appropriate name to give to all those galleries which have the light directed on to the picture walls from both sides of the room and are capable of being converted into a modified top-side-lighted room on each side in turn by the use of opaque blinds as described in the section of the Palace of Art, Wembley, Fig. 1.

It matters not whether the light falls on the walls from the nearest skylight, as in the top-side-light (Division C), or falls on them from the light on the opposite side of the room—as in the Palace of Art—the effect is the same. In both cases opaque blinds would have to be used to get rid of reflections, and they may therefore well be placed in the same class.

Under this heading there would also be placed the side rooms of the Wallace Collection, one narrow room (No. 5) in the National Gallery, the Water-Colour Rooms in the National Museum of Wales and the Southampton Art Gallery—all lantern-lighted rooms with solid ceilings, those rooms like the Archaic Greek Sculpture room (No. 12) at the British Museum, which have their lights on both sides high up close to the ceiling, and the galleries for small pictures at Wanganui (Illustration No. 3, 1923).

No. 3, *Top-Lighted.*—Under this heading must be placed all the galleries in which the lighting is directed on to the floor, whatever the form of the roof may be. There are many new galleries which have their skylights in the lower slopes of the roof as at the Wallace Collection, and I was hastily led to believe that they could be treated in the same way, but owing to the flatness of the angle it is impossible, as I found by trial, to convert them into modified top-side-lighted galleries by the use of blinds.

The new rooms in the Dulwich Gallery, Room 25, and all the smaller rooms at the National Gallery—with the exception of Room 5—and many others which have the lights so placed, are as much top-lighted rooms as those—the great majority—which have a central skylight with or without ceiling lights. In many cases very slight structural alterations would convert them into pseudo-top-side-lighted galleries to their very great advantage.

Lighting Should be Under Control.

Blinds are now everywhere used, not for the purpose of controlling the source of light but for the purpose of shutting out the direct rays of the sun. They are needed because the wrong kind of glass is universally used.

Kaleidoscopic glass—or art gallery glass, as it should be named—and opaque blinds should always be inserted, for apart from their use in overcoming defects in present galleries they give such perfect control over the lighting that any gallery can be used for any of the various classes of exhibits included in a picture gallery or museum.

It must be remembered that pictures range from very light and delicate water-colours and pastels up to very dark oil colours characteristic of the Dutch and other schools. The light which would be suitable for the one would be wholly unsuitable for the other. The sizes also vary from the small miniatures and

miniature-like paintings requiring close inspection to the large canvases which can be seen properly only at a considerable distance. Whatever the tone or size of the picture a light from one source is necessary, but for sculpture, furniture, pottery and industrial art generally a well diffused top light modified by the pseudo-top-sidelight is essential.

It is impossible to tell beforehand the number of exhibits that will be acquired in any class, and it is therefore of the greatest importance that directors should have in many rooms the power to convert the pseudo-top-side-lighted rooms into modified top-side-lighted ones and to diminish or increase the light to any extent required in the manner already shown.

Test at the Wallace Collection.

At the Wallace Collection on a day when the sun was obscured sufficiently to give perfect diffusion of light the amount in the centre of the floor was 10 F.C., and the light on both walls 5 F.C. ; when the external light became bright enough to give 20 F.C. on the centre of the floor the light on both walls was 10 F.C., showing that the light on the walls varies in direct proportion to that on the floor, and in both cases the centre of the floor was the best lighted part of the room (Illustration No. 2). Because the light on the walls in relation to the floor was equal, therefore the reflections on both walls were of equal intensity, and as might be expected they were very pronounced—in some cases overpowering.

Under these conditions of lighting, the room, quite unsuited for glazed pictures, was excellently adapted for sculpture and general museum exhibits, while unglazed pictures could be seen on its walls without glitter. On obscuring the east lights the room was at once converted into an imperfect modified top-side-lighted one. The blinds being translucent allowed a certain amount of light to pass through and prevented the full effect of the modified top-side-light from being seen, but the stream of light from the western skylights altered the condition of lighting to such an extent that the reflections of the pictures on the eastern side were so far obliterated that they did not interfere with the enjoyment of the picture.

The light in the centre of the floor was now 7.5 F.C., and the light on the bright eastern side at 6 feet from the floor was also 7.5 F.C., while at the same height on the western wall the light was 2 F.C., giving a relative proportion of 3.5 to 1.

Tests at the Palace of Art.

Tests were made at the Palace of Art, Wembley, when the sun was shining through the clear glass on the western side, and the rays were falling as a longitudinal strip about 2 feet wide in the centre of the floor. The east windows were shielded by translucent blinds. Therefore the west side was in shade and the east side in relatively bright light. On the floor in the shade on the western side the meter recorded 20 F.C.—on the eastern side 50 F.C.

The western wall had an intensity of 15 F.C. and the eastern wall the same as the eastern part of the floor, *i.e.*, 50 F.C. Even under these conditions of very excessive lighting the pictures did not appear to be over-lighted—though there was at least five times more light shining upon them than there should have been, so readily does the eye accommodate itself to the varying degrees of intensity. Bright as it was, the relative brightness—1 to 3.3—was very slightly different to that at the Wallace Collection when the light on the picture was 7.5 F.C. The same proportions produced the same results : the entire obliteration of reflections in the lighter pictures, and in the dark ones they did not in any way interfere with the spectator's enjoyment. Under these circumstances it was interesting to see how the spectators turned unconsciously to the well-lighted pictures—enjoying them to the full—and passed out without realising that they had ignored the equally valuable but ill-lighted pictures (ill lighted, though 15 F.C. was upon them) hanging on the opposite wall. Exactly the same effect was seen on a sunless day, when, of course, the F.C. was very much reduced.

From the above two tests it will be seen that whether a gallery be under-lighted, or much over-lighted, the effect is the same, for the result is dependent only on the relation existing between the light on the opposite walls. Had it been possible to use opaque blinds a greater difference than 1 to 3.3 would have been obtained and the reflections entirely eliminated.

Variety Essential for Artistic Effect.

It cannot be too often insisted on that in an art gallery and museum there should be variety in the size and forms of the galleries, in the lighting effects, and in the colouring of the walls and ceilings. Nothing can be more depressing than a series of rectangular rooms lighted in the same way with the eternal and most mischievous white ceilings and friezes. Poverty of invention and lack of skill in design are seen everywhere, and in those cases where originality and breadth of vision have lead to a pleasing plan the whole work is carried out with such a total ignorance of the basic principles which should have been followed that nothing more than an " architectural inutility " has resulted.

Some buildings, though not fully successful, show a very marked advance on what has preceded them, and many contain germs of ideas which if scientifically developed will lead to an artistic success. The study of all these is of the greatest possible value.

(1) The Wallace Collection

(4) The Wallace Collection

(2) The Adoration

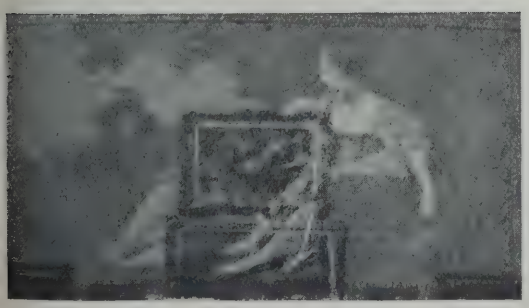
(1) Side room looking north. The pictures Nos. 2 & 3 were photographed on the west wall when both skylights were exposed—the room thus being *Pseudo-Top-Side-Lighted*. The reflections were overpowering.

(4) Side room looking north. Pictures Nos. 5 & 6 were photographed when the western skylights were partially closed by the use of translucent blinds, converting the room into an imperfect *Modified-Top-Side-Lighted* one. The reflections were considerably reduced and would have been obliterated if the blinds had been opaque.

Nos. 2 & 5 by the courtesy of *The Sphere*, 4 & 6 of *The Builder*

ILLUSTRATION NO. 2

(5) The Adoration

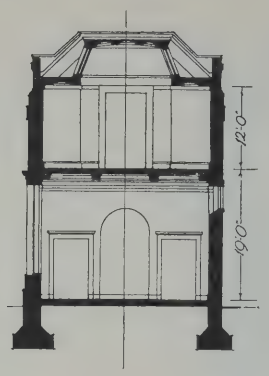


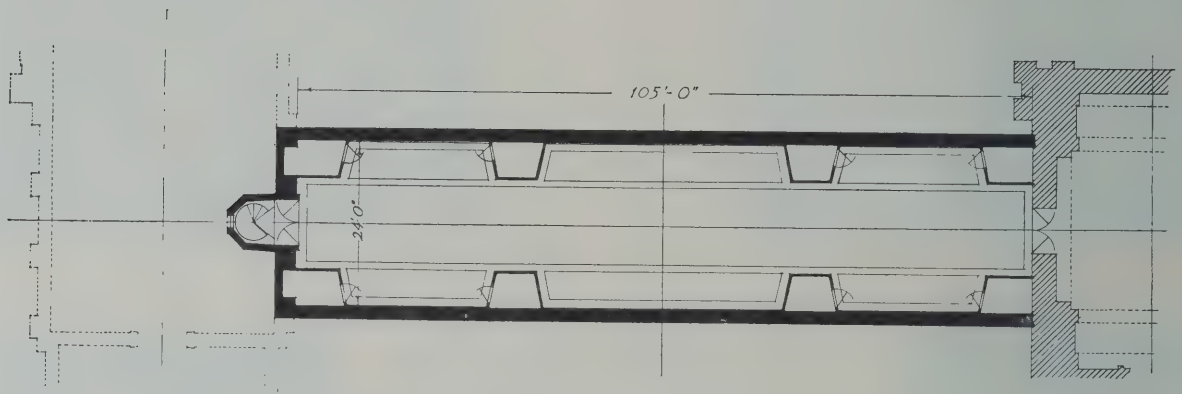
(3) The Shepherd

(6) The Shepherd

FITZWILLIAM MUSEUM, CAMBRIDGE
THE NEW MARLAY WING
Smith and Brewer, Architects

ILLUSTRATION No. 3





THE MARLAY WING, CAMBRIDGE.

An interesting advance has been made in the Marlay wing of the Fitzwilliam Museum, Cambridge (Figs. 3, 4 and 5). The parts just completed from the designs of Messrs. Smith and Brewer are the upper and lower connecting galleries which will form galleries of communication between the present buildings and the large Marlay block yet to be built. The advance is shown in the upper gallery. It is 105 feet long and 24 feet wide, of the plan and section shown in the illustration, and is one of the most pleasing and best lighted galleries yet erected in this country.

As nearly all the pictures are unglazed there is little trouble with reflections or glitter, but that it would not be more suitable for glazed pictures than the Wallace Collection and the Palace of Arts at Wembley is at once shown by the experiments made. Fortunately my visit was made on a bright sunny day (November 15). The gallery runs S.S.E.–N.N.W., and by 10.45 the sun was shining obliquely on the western side. The blinds on that side are drawn throughout the day. They are buff in colour, shedding a distinct glow on the pictures on the eastern side, contrasting with the white light passing through the clear glass windows of the eastern side on to the western wall.

I have stated that the ordinary use of blinds for shutting out the sun's rays equalises the light and gives equal reflections on both sides of the room. This was here proved. The intensity of light on the centre of the floor was 30 F.C., while on both walls it was exactly 20 F.C. The light on the side walls of the bays was only 5 F.C., yet with this light, as the photograph shows, the pictures could be well seen. The reflections in the few glazed pictures on both the east and west walls were very pronounced.

At 2.45, when the sun's rays were horizontal, and the sun was only bright enough to be comfortably looked at, the light on the floor, with the western skylight still obscured, was 10 F.C.—the light on the eastern wall 5 F.C. and on the west 8 F.C. The reflections were still pronounced. At 3 o'clock, when the sun was too low to enter the room, the western skylights were exposed and the light on the eastern wall was thus increased to 20 F.C., while the light on the western wall increased somewhat, but not enough to obliterate reflections until the eastern skylight was obscured—then the light on the western wall was reduced to 4 F.C. The light on the centre of the floor was constant at 10 F.C. and the glazed pictures on the eastern wall could be beautifully seen. Here the proportion is as 20 to 4 or 5 to 1—great enough entirely to obliterate all reflections of pictures on the opposite wall, and this although the picture was a very dark one and had overpowering reflections under ordinary conditions.

It will be noticed in the views of the interior (Figs. 4 and 5) that the formation of bays adds enormously to the artistic appearance of the gallery. None of the

edges of the picture frames are seen, but only the vista of the pictures on the projecting sides of the bays. These projections stand out 5 ft. and have a 6-foot face, the interiors forming useful storerooms.

The plain rectangular room of 105 by 24 would have an area of 2,520 feet and a length of hanging surface of 246 feet—a proportion of floor to wall length of 10·2. With the bays as formed the length of hanging surface is increased to 277 feet and the proportion of floor to wall is reduced to 9·1 feet (including, moreover, eight stores each 6 feet by 5 feet).

The advantages of even a modified bay system are obvious : there are no decorative features—the walls are prepared for the hanging of pictures throughout, and their treatment has won the warmest praise from all artists and critics who have seen it.

Fig. 6. The Grand Palais, Paris ·
A most interesting example of a perfect top-side-lighted gallery; arranged as part of the Salon

Top-Side-Light in the Grand Palais, Paris.

An excellent example of the varied way in which the top-side-light system may be carried out is seen in the illustration (Fig. 6) taken in the gallery of the Sculpture Hall during the Salon Exhibition. Pictures had usually been exhibited on the inner wall of this gallery as shown in Figs. 13 and 14 (1923), but in that year a screen about 8 feet high was fixed on the outer side for the purpose of exhibiting tapestries, and the result was that the gallery was immediately converted into the best lighted one in the whole exhibition. The greater number of the pictures were glazed and there was not a suggestion of reflections. The light streamed over the tapestries from the brilliantly lighted Sculpture Hall—the source of it hidden from the spectators—and while perfectly lighting the pictures allowed them to be seen from the relatively subdued light on the space next the tapestries in which the seats were placed. It was perfect, and the curve of the gallery distinctly added to its charm. Through the opening on the left in the photo is seen one of the main galleries lighted with top light and full of the faults which that method produces.

Palais des Beaux Arts, Brussels.

This fine art gallery (illustration No. 8, 1923) affords an example of that falling short of complete success which might have been obtained under the conditions created. There was the well-lighted central hall devoted to sculpture and the upper side galleries in which the pictures could have been as well seen as at the Grand Palais if only the lighting problem had been carefully studied. All the conditions that are required for perfect lighting are there seen, but as it stands no glazed picture could be exhibited and the famous oil paintings which hang on its walls cannot be seen for the strong glitter upon them—in some instances the glitter is avoided by tipping the pictures in a very crude manner and thus destroying the harmony which should exist throughout.

It is, however, a splendid example of possibilities, and if taken as a starting point would undoubtedly lead to a great success. In order to create more perfect diffusion and closer approximation to the conditions of exterior lighting the roof should be nearly wholly of glass, as at the Grand Palais, but the light itself should be prevented from dazzling the spectator by being shielded with deep coffers as already suggested (illustration No. 8, 1923). With a top-side-light for the galleries and an 8-foot screen or screen wall on the outer edge a perfect gallery could be created on the most economical lines possible.

The fine effect gained when looking down from the galleries should not be wholly lost, and balconies could be formed in the centre of each side as rest and view points.

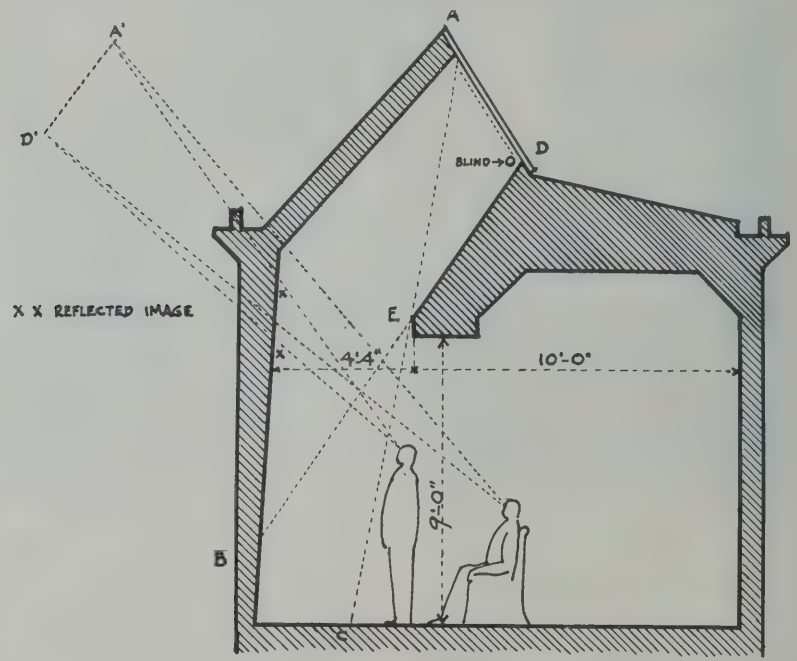
Side-lighted rooms are beneath the galleries and additional top-lighted rooms lead off from the galleries round the Sculpture Hall.

National Portrait Gallery.

This gallery is quoted always as illustrating in every particular what a gallery should not be, but bad as it is, there is one feature which is suggestive and might lead to artistic treatment. There is a room on a Mezzanine story at the top of the short flight of steps from the entrance which has arches opening on to a small room containing the portraits of the Generals of the Great War : the floor of this room is at the basement level, and its ceiling at the level of the mezzanine. It is top lighted, and therefore very ill lighted. Galleries might well be built on both sides of such a mezzanine and the pictures effectively viewed from it. They would, of course, be lighted with top-side-light and would be especially suitable for the exhibition of large pictures—particularly large vertical ones.

The centre of pictures *should be below* rather than above the horizontal. There are many large pictures—and pictures raised high above the eye—which cannot

SUGGESTED GALLERY FOR MINIATURES AND SMALL PAINTINGS REQUIRING VERY CLOSE EXAMINATION



VILLE DE ST. QUENTIN
MUSEE DES PASTELS
DE QUENTIN-LATOUR

Fig. 7

Section drawn by the Architect, M. Bigot, from sketch design by Mr. S. Hurst Seager

be properly seen from the floor of rooms : we are compelled to look up at them at an acute angle to our great discomfort, and a ruinous foreshortening of the pictures—often to the extent of 135 degrees, and even more.

Naturally the direction of our vision is below the horizontal, and it will be found that it requires a slight effort to raise the eyes up to it : the additional effort required in our galleries to look at pictures much above the level of the eye accounts in some degree for the fatigue experienced.

From the above examples it will be realised that the question of lighting is one affecting the very basis of the design and must be clearly in the mind of the designer from its inception.

Attuning the Eye : An Example from Westminster Abbey.

It may appear strange that we should find in Westminster Abbey anything which would help us in designing a picture gallery ; but there is at the eastern end of the Ambulatory a good illustration of the principle of attuning the eye to variety in the intensities of light. The dark entrance to Henry VII's Chapel, which Dean Stanley speaks of as " a solemn architectural pause," is of the greatest value in creating our impressions of light on either side of it. If we pass through it from the Ambulatory the Chapel appears to be brilliantly revealed to us in all its magnificence of architecture and wealth of imagery, while on descending the steps we look into what appears to be a very well-lighted space, in which many architectural and historical features combine to make it one of the most beautiful of the more intimate views in the Abbey. So valuable is this darkened entrance stairway in respect to the lighting, that this brilliance of effect was seen on a very dull day, when the exterior light was under 100 F.C. At that time the light in the Ambulatory was only 1 F.C. ; in the entrance .1 F.C., and in the Chapel 1 F.C. ; therefore a spectator at the entrance would be in a light having one-tenth of the intensity of the light on either side ; or, in other words, he enters a light having ten times more intensity than that which he has passed through, and this fact enables him—even in so low an intensity as 1 F.C.—to see the most minute details and read the smallest print with the greatest ease. The diminished light at the crossing between the N. transept and Poets' Corner serves the same useful purpose : there the light was .25 F.C., while the light all round it was 1 F.C., so that we pass into a light in each direction four times greater than that which we have left—a sufficient difference to give the effect of excellent lighting. On going from the nave into the western walk of the Cloister the impression was created of passing into bright daylight, yet in the centre of the walk the F.C. was only 5.5—an intensity five and a half times greater than in the nave.

A Subdued Intermediate Light is Necessary.

The eye is *not a guide* to intensity of light. It is absolutely impossible for our sense of sight to distinguish the actual F.C. in any gallery. A gallery may be lit above its requirements, but if approached from an over-lighted space may appear dreary and dull ; the eye, of course, soon becomes accustomed to the diminished light, so that the pictures can be perfectly seen, but the impression of dullness remains, and interferes very largely indeed with the pleasure the visit might otherwise have given.

Examples of this defect are seen at the Louvre, where the entrance to the De-La-Tour Gallery (see *l'Illustration*, 9 December 1922) is approached by walking towards a large southern window, and at the water-colour rooms in the National Gallery of British Art. The axes of the rooms in this building are either S.W.—N.E., as in the Turner Gallery and the water-colour rooms, or N.W.—S.E., as in Gallery No. 7. The visit was made when the sun was not visible, but its light was shining through the clouds due south ; the N.E. and N.W. walls were thus the better lighted. The water-colour rooms are approached from Gallery No. 7 through the large Turner Gallery, which had an intensity in the centre of the floor—even on this dull day—of no less than 45 F.C. ; on the N.W. wall it was 20 F.C., and on the S.E. wall 15 F.C. In Gallery No. 7—in which are several Turners—the light on the floor was 50 F.C., that on the N.E. wall 30 F.C., and on the S.W. wall 20 F.C. The reason for the brighter light is that the skylights are much lower than in the Turner Gallery.

On passing from the over-lighted Gallery No. 7 into the low moderately lighted water-colour rooms the effect noted above was experienced, yet there was more light in these rooms than was necessary, for on the floor the light was 20 F.C., and the unimpeded light on the S.E. wall was 7 F.C. The N.W. wall had only 4 F.C., because the shade of the much higher Turner Gallery was upon it, as was proved by the fact that on the corresponding wall in the distant room No. X the light was 6 F.C., though the light on the floor was the same, namely 20 F.C. Had the entrance to these rooms—as also to that at the Louvre—been through a subdued lighted space, the effect would have been very different.

In picture galleries violent contrasts in light are not needed, nor are they desirable, but in all cases it should be arranged that the light at the entry is more subdued than the light of the room to which it leads. This could often be effected in those buildings in which the original design is at fault, by simply veiling the entrance with a dark curtain.

Lighting Diagrams are Required.

To ensure complete success in gallery design, longitudinal and transverse sections must be prepared for all the rooms showing the visual image and the intensity of light in all parts, as in the diagrams in the 1912 paper and in the section of the Wembley Gallery (Fig. 1).

The sections to be of value must show not only the section of the galleries themselves, but must also include the position and heights of adjacent buildings.

Many of the galleries I have visited have their conditions of lighting entirely altered by some exterior feature. In some cases, as at the Soane Museum (illustrated in the 1923 paper) the lighting has been made perfect by the accident that one side of the room was formed against a high building—the room was inadvertently turned into a top-side-lighted room.

In far the greater number of cases, however, the external features are decidedly detrimental to the lighting. At the Museo Nazionale, Rome, the window at the end of a gallery is in the re-entrant angle of the building, so that the cases close to the window on one side of the gallery derive their light from the clear sky and on the other from the scattered light from the brick wall. The glass case opposite the clear sky was perfectly lighted, while that on the opposite side was so full of reflections that the exhibits could only with difficulty be seen.

Exactly the same thing occurs in the first bay on the right of the Lower Mammal Room at the Natural History Museum, where the light on the cases on a very dull day was 1 F.C. on the one side and only .35 F.C. on the other. The N.-S. Nimroud Gallery (No. 23) at the British Museum is another interesting example. There a low gallery is built against the high west wall of the main building. The gallery is top-lighted with open skylights, through which the light from the western side at all times lights the eastern sculptures perfectly, while those on the western side suffer in the same way as those at Rome. I have above noted also the same effect in the water-colour room (No. 8) at the National Gallery of British Art.

It is not only adjacent obstacles which affect the lighting. At the new picture gallery at the Vatican the windows are on the east wall (therefore with a west aspect) opening on to a very large courtyard. The buildings on the western side of the courtyard terminate before reaching the space opposite the window, with the result that the window was freely open to the sky to the west and the south-west, and the pictures lighted by the oblique rays from the south-west were very well lighted, in striking contrast to those which received their light from the north-west.

Therefore every window—every source of light—must be carefully studied by means of lighting diagrams if a perfectly successful result is to be obtained. It should be noted that in any room the ceiling light must not be regarded as a source of light—the source of light is from the skylights in the roof above, and their position will affect the lighting of the room in practically the same manner as if no ceiling light existed. An example of this is seen in the N.-S. Gallery devoted to the "Primitives" at the Louvre. A relatively bright light is thrown through the ceiling light from skylights directing their light on to the pictures on the east and west wall, so that whenever the sun is shining it is possible to see all the glazed pictures on one side or the other to the best advantage.

Personally, I am of opinion that ceiling lights should never be introduced, but it has been raised as an objection to the top-side-light system that it necessitates an open roof. This is not the case, for we may have controlled pseudo-top-side-light, and also top-side-light arranged *above* a ceiling light. If the glass in this is plain sheet glass with a very lightly ground surface, the rays of light will not be deflected to any extent and the amount of light lost by reflection from the upper surface and the translucency of the glass will not appreciably diminish the light in the room unless seen in contrast with an open-roofed gallery, as at the Wallace Collection, where the large room has a heavy ceiling light seen in contrast with the better lighted pseudo-top-lighted rooms adjoining, as seen in (4) illustration No. 3, where the door at the end opens into the ceiling-lighted room.

Side-lighted Rooms.

A further study of side-lighted rooms has shown how absolutely impossible it is to obtain good lighting in them unless arranged for exhibition purposes. The domestic side-lighted room is wholly unsuited for exhibition purposes; nothing can be seen on the window wall by reason of the strong contrast between the source of light and its surface: any pictures on the opposite wall are either, if glazed, full of reflections of the window, or obliterated by glitter; while glazed pictures on the side walls reflect everything in the centre of the room. It would not be necessary to point out these obvious facts if recent illustrations of "period rooms" had not shown that they had been overlooked. There is now rightly a strong desire for the exhibition of pictures in relation with the furniture of the time, and it cannot be too firmly insisted that on no account must the window be the source from which the room is lighted. It is not so at night, and it need not for exhibition purposes be so in the daytime. The window in its design and adornments is so typical a fixture at all periods that it must have a prominent place in the scheme, and nothing could be better than that it should be placed opposite the passage-way for spectators as at Wembley. This passage-way

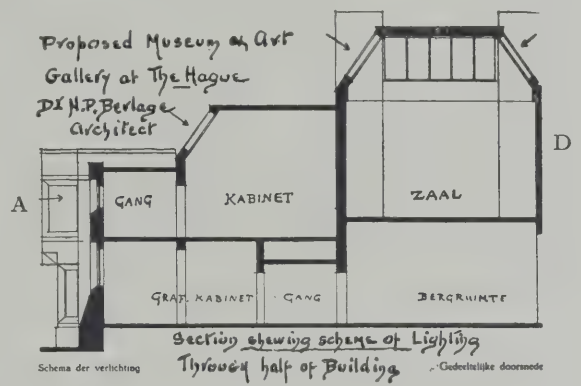
should be ceiled at a lower level, and the light for the room obtained from a vertical window over it, as shown in diagram form in the lower part of Fig. 10 (1923). In this way not only could all exhibits, even glazed pictures, be well seen on the walls, but all the furniture and ornaments would have their illuminated side *towards the spectator*, and could be seen to the greatest advantage. Here, of course, the room would be roped off: it is not so in many of the museums on the Continent, where I have seen visitors entering the beautifully furnished rooms, and walking over the parquetry in iron-shod mountain boots. Not only is this practice to be condemned by reason of the damage done, but also because it is to the great advantage of visitors that they should see the room from the best point of view, and at the same time not interfere with the view of others. This applies equally to the exhibition of all pictures. But whether the room is to be entered or not it is imperative that the window should be as near the ceiling as possible and the cill of it at least 8 ft. from the floor; but here, as in the case of top-side-lighted rooms lighted by skylights, there should be as much control as possible, and this can be most easily obtained by the fixing of opaque blinds at the cill, so that the light may be shut off from the bottom to any desired height. The success of such an arrangement was proved in the De-La-Tour room at the Louvre, already referred to.

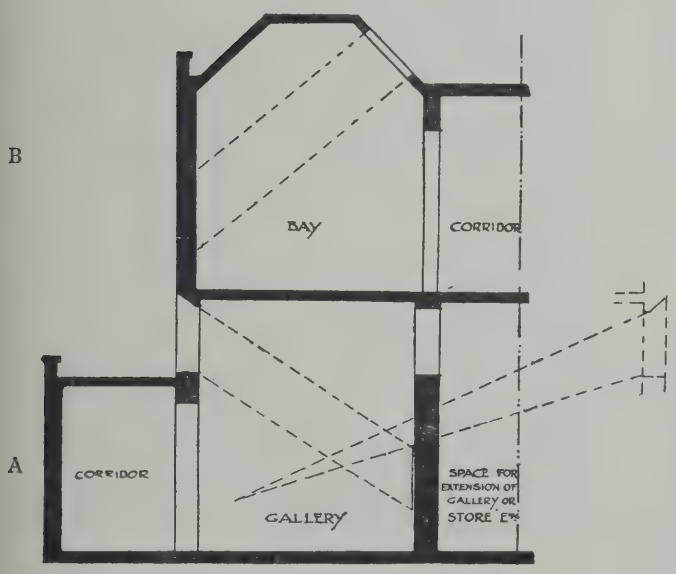
The only examples of rooms successfully side-lighted with low windows are those which are long and narrow, with the windows far enough apart in the length of the wall to allow of side diagonal lighting of the pictures on that portion of the wall opposite the space between them, and the space opposite them occupied by furniture and ornaments. The wall between the windows is also of value, for the exhibits can be looked at in the subdued scattered light without being dazzled by the light of the window. (Fig. 6, 1923.)

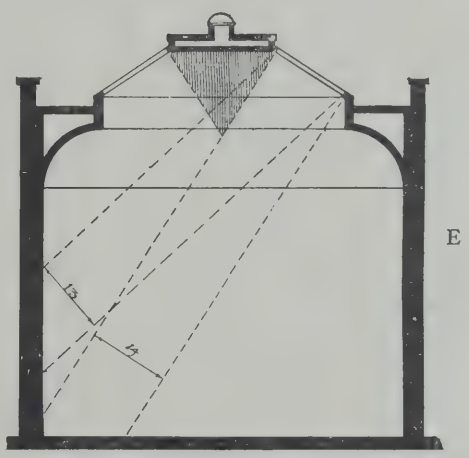
ILLUSTRATION No. 8

CLASSIFICATION OF SYSTEMS.

AA. Top-Side-Lighted.—Division A.
B. Ditto Division B.
D. Pseudo-Top-Side-Lighted.
E. Top-Lighted.







SECTION OF NEW GALLERY DULWICH
SHEWING STRONGEST LIGHT ON FLOOR

Reviews

GOOD MANNERS IN ARCHITECTURE.

GOOD AND BAD MANNERS IN ARCHITECTURE. *By A. Trystan Edwards.* [*London: Philip Allen & Co.*]

Mr. Edwards has chosen an attractive title, and he has developed his idea so delightfully that architects owe him a debt of gratitude. When our clients want to assert their British independence by demanding buildings entirely out of keeping with their surroundings, all we need do in future is to lend them a copy of "Good Manners in Architecture" to convince them that monotony is not the only, nor even the greatest, danger to be avoided.

The book is divided into four roughly equal chapters, of which the first, third and fourth contain the argument, while the second is a description of old Regent Street as an example of good manners. Unfortunately Mr. Edwards is so far carried away by his enthusiasm for Nash, whom he classes with Wren above all other English architects, that the panegyric on Regent Street and the denunciation of its destroyers become ends in themselves, not merely illustrations of the main idea of the book. It is consequently something of a shock, after the burning advocacy of stucco in the second chapter, to return in the later chapters to simple logical argument in the style of Chapter I. And the book would have gained in coherence if the chapter on Regent Street had been reserved to the end.

The chapters containing the main argument are illustrated with a most intriguing set of diagrams. And a good half-hour's entertainment can be got by examining the diagrams and deciding what good or ill manners they illustrate, before reading the text. The diagrams show no brilliant draughtsmanship. But they are clear and concise, and add immensely to the vividness of the morals they are intended to point.

The chapter on Regent Street contains many delightful reproductions of old drawings and photographs which almost persuade us that Mr. Edwards is right, and that politeness is the highest aim of architecture. Probably Mr. Edwards would repudiate any such view. But something very like it seems to be implicit in his analogy.

Anyone who has read "The Things Which are Seen" will have recognised in Mr. Edwards an extremely original thinker, with a gift of clear exposition, however much they may have disagreed with some of his ideas. His new book will add to his reputation for clear and attractive writing. It will give many laymen a new and much wider outlook on architecture; and there will be few architects who can find nothing to learn from its pages.

A. H. Moberly [*F.*].

CUBIST ARCHITECTURE.

ERICH MENDELSOHN, STRUCTURES AND SKETCHES. *Translated from the German by Herman George Scheffoner.* [*Ernest Benn, Limited, London, E.C.*] 21*s. net.*

Published in London, but printed in Berlin. Fortunately, except for a few descriptive marginal notes to the plates, there are but two pages of intensive letterpress—of unpleasant foreign type. It is also in an unserviceable white binding; large quarto. The work is otherwise made up of completed structures, chiefly of a warehouse, factory, or business type; working drawings of some of these latter; and several plates of wild-looking "sketches"—or germs for some of these and for other, it is presumed, undeveloped structures not carried further so far as the evidence of this volume goes. We are not definitely told whether the "sketches" are in fact germs or first white-hot nebulous inspirations, or are a boiling down after the event. If the former, that much should be left to the imagination is not to be wondered at. Whether privy to, or prior to, the event, they—some of them—show considerable power in grasping and expressing the essentials of a composition. They are wielded with a broad stump, or (apparently) the feather end of a quill almost, or with charcoal, as the case may be. Whether or not all the features in these visions would justify themselves in fulfilment is another matter. But there is undoubted fine and strong modelling in some of them. If they be indeed done as notes of a first inception, and not merely as exercises at the end, they show grip in handling and in keeping to the Idea right through all the stages to final realisation, though the genial remarks of those in charge of the manipulating of the "false-work" (the author deals almost exclusively with ferro-concrete structures) are not recorded. Or the author puts it in more professional terms:—"Only the well rounded, self-contained personality will be able alike to dominate intention and calculation." While it is not given to the present reviewer quite to perceive the quality of the rounding-off of the personality revealed in some of the sketches, he would keep an open mind on the possibility of their being dominated unto fine ends. After all, it is no good having at our hands a material like ferro-concrete if we are wholly to deny ourselves the pleasure of taking some little liberty in the moulding of forms coming out of its rational use. Liberty, as against stereotyped forms which have become conventionalised in the long, and not infrequently undiscerning, use of the older materials. We do not look for "architectural" accessories in the head works of a coal mine. Why should we do so in a grain silo, or round a railway station? And who shall fix the dividing line? At all events our author goes as far as an observatory, the Institute for Astro-physics at Potsdam, and moulds it as he would, yet apparently

fulfilling practical and scientific ends the while :— " Built 1920–26," we are told, " a combination of cupola observatory and astro-physical laboratory for the investigation of spectro-analytical phenomena, especially in relation to the Einstein theory of relativity. The collastat in the cupola reflects the rays emanating from cosmic sources of light perpendicularly into the subterranean laboratory. Here they are refracted by means of an optical square with an inclination of 45° to the instrument for developing, comparing and measuring the spectra." At first sight the photographs appear to be almost fakes from models. But they are not. For strange, eerie, and uncanny as they appear [*uncomfortable* also, we cannot but think, must be the opinion of those whose lot it is to use the cubist chairs and tables portrayed in the interior views : one involuntarily expects to see cubist books on the table ; but they are apparently quite normal harmless volumes] and they bear evidence of something of definite achievement and rather wonderful achievement at that. The photographs are supported by plans, elevations, sections, and details, all dimensioned up in a thoroughly practical manner. The appearance externally is like nothing so much as a gigantic six or seven storied armoured turret and conning tower on a super battleship in dry dock or petrified in earth on the waterline. Otherwise one almost expects to see it pitch and toss and surge to the elements or the enemy.

The example of a dye works is also interesting, the photographs on p. 20 giving a fine simple " cube "—and also, let it be admitted, *cubist*—effect in light and effect. Here again the forms are the direct outcome of the practical requirements of dyeing and other processes carried out in the factory. Whether we do or do not go the whole way with the author in his use of party-wall *toothing* in brickwork over an extended surface horizontally is another matter. Yet we venture to think many can recall examples of uncompleted church façades abroad where the bare toothing of the brick wall had left a finer and broader effect than had the contemplated marble facing been carried out. Even if this be allowed we have to be rather on our guard when we are asked to accept it that " the unique nature of architectonic space conditions the unique quality of its effects. Its final consummate expression is independent of decoration and dress." Is it really as unique as all that ? In one present case, at all events, the toothing essays to be a species of " decoration and dress " in itself though at the best of a coarse and fustian form.

In a further example—additions to the *Berliner Tageblatt* offices, plates 33–43—the author carries his futurism—*i.e.*, his independence of thought—into the realm of actual street architecture. And however much we may dislike it, or however much it may shock our cherished ideas of convention, it will probably, though not readily nor without reservations, be admitted that it is a strong and resourceful solution of by no means an easy problem, that of superimposing two or three additional storeys upon long return frontages already five storeys high and of a nondescript type of architecture. The opportunity and saving of the situation appears to have been the condition that, on the angle, the " extensions " might start from the ground level. Except for the fact that the line of piers of the old front are extended vertically into the new it may be said that there are no other inter-relationships. The cut-off is decided and complete. The old is merely ignored. Let any questioners try their hands at setting out a more conventional rendering if they will. Though whether the treatment of the wide curved windows of the corner adequately solves " our task to find an architectonic expression for these forces of mobility, and by means of architectonic form to establish an equipoise for these tensions, as well as to make the inner forces which are bent upon expressing themselves in outer forms " or not may be a matter of opinion. Neither are we quite sure that the overhanging, ledged, *pagodaic* treatment—more especially as threatened in certain of the undeveloped " sketches "—p. 31, for instance—in such a ponderous material as ferro-concrete, might not in itself prove the " danger of an unbridled temperament in the matter of dynamics " though " it corresponds here to the equally great danger of an all too conscious abstraction." Or again we have—" Plethora as well as anæmia are both danger zones for vital creation."

FRANK LISHMAN [*F.*].

Correspondence

VITRUVIUS.

Sir John Soane's Museum,
13 Lincoln's Inn Fields, W.C.2.
9 December 1924.

SIR,—Mr. Ernest Flagg's communication is of great interest, but, while agreeing as to the probable status of Vitruvius as an architect, I cannot say that the unit idea strikes me as so very new. Professor Roger Smith, say 40 years ago, used to mention the subject to his students. He used to quote Brunelleschi's church of San Spirito, Florence, as set out on a unit of eighteen feet, which I have verified, so far as the plan is concerned. Also the Crystal Palace as on one of eight feet, which I understand applies in section and elevation as well. St. George's Hall, at Liverpool, is said to be on a basis of thirteen.

I have never thought the module, by diameters of the columns, was satisfactory, or that it could be reconciled with my own observations. On the other hand, I have in measuring old buildings never failed to find such discrepancies as must, in my opinion,

militate against any fully worked out system. A Greek Doric temple, and the Parthenon in particular, is an altogether special case. Tradition, material and brilliant sunshine made it possible to do things there, which it does not seem likely were done in the general mass of Greek architecture. Moreover, as soon as a building is in several planes, like St. Paul's, for instance, the same unit could hardly apply, and I believe that the known width of the churchyard, and other site conditions, were a material consideration with Wren in determining heights. I have always believed that mediæval buildings, and others of long period construction, have owed much to the architects' reflection on their appearance, as they grew, seen as they were from day to day under every possible aspect and point of view. If you take an instance from old Smirke at the British Museum it is fairly certain that his Ionic order is a direct transcript, but obviously the soffite of the cornice projects too much, because he has not allowed for the reflections that would arise from the use of marble under a different sky. The moment you begin to admit the discretion of the artist the mechanical theory of proportion is doomed. The second Curator here, Bonomi, left a series of sheets of the proportion of the human figure, derived, I believe, from Albert Dürer, and there is never likely to be an end of speculations on the subject. Professor Aitchison used to say that the best proportioned building in London was the Reform Club. If there is a unit there, I suppose it must be the width of the window opening, because we know that Sir Charles Barry scrapped an entire set of drawings, on deciding to slightly increase its width, whereby all the centres were thrown out. Mr. Flagg should, I suggest, apply his theory to universally accepted modern buildings and see what results he can obtain. The Greek Doric temple by itself is too limited in range to be conclusive. Some results should, if anywhere, be obtained from a comparative analysis of the best Romanesque buildings, which surely exhibit a particular refinement. I could not, however, in the case of Chalais in the Charente obtain any particular result from the setting out of the west façade.

Yours sincerely,

ARTHUR T. BOLTON, F.S.A. [*F.*], *Curator.*

DIOCESAN ADVISORY COMMITTEES.

8 *Montague Road, Richmond Hill,*
10 *December* 1924.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—The establishment of diocesan advisory committees has, I believe, been generally accepted with approval, but I venture to suggest that there is something to be said on the other side of the question. The system would, of course, be admirable if it could be ensured that the members of such committees were in all cases competent and disinterested, but I have reason to consider that this condition is not always fulfilled, and I should be glad to know whether the experience of other architects confirms my opinion. I will mention two cases in point which have occurred in my own practice. I was commissioned to design an oak reredos for a modern church of fairly good work for the time of its erection, "Early" in style. When the faculty was applied for it was refused on the ground that the committee had reported the design as not in keeping with the style of the church, and it was suggested that the reredos should be in the style of the fifteenth century! As the Vicar wished to meet their views, a second drawing was prepared and submitted, but this also was rejected without explanation. Investigation brought out the fact that a leading member of the committee had a personal grudge against the firm of craftsmen which had secured the contract for the work.

In another case (in a different diocese) my client proposed to erect an elaborate alabaster reredos as a memorial of a deceased relative and wished to have it similar in style to one erected in a neighbouring church. The chancel was ancient, but every feature had been eliminated from it in the first half of the nineteenth century and nothing remained to influence the style of the reredos, but faculty was refused on the committee's report that the design was unsuitable to the church, and the donor was asked to substitute an oak screen to be designed and executed by a certain firm of craftsmen in a neighbouring city, and he was referred to a screen recently executed by this firm which on inspection he found to be heavy in design and very costly. Apart from my client's preference for the reredos, such a screen was entirely unsuitable for the church. After consultation with a member of the committee the donor agreed to some suggested modifications and a second design was prepared involving an increase of cost. A delay of about five months followed, and the faculty was refused. As the donor was unwilling to employ the committee's protégé, he decided to abandon the scheme until more reasonable counsels prevail in the diocese.

If such cases are found to be not infrequent, some action should be taken to prevent our profession from being discredited.—Yours faithfully,

J. STANDEN ADKINS [*F.*].

THE LATE SIR THOMAS G. JACKSON.

MEMORIAL SERVICE.

A memorial service was held at St. James's, Piccadilly, on 9 December, for the late Sir Thomas Graham Jackson. Archdeacon C. E. Lambert, assisted by Canon Monroe and the Rev. H. F. Webb-Bowen, conducted the choral service. Many Royal Academicians were present, including Sir Aston Webb (president), Sir Frank Short (treasurer), Mr. Sims (keeper), and Mr. W. R. M. Lamb (secretary). Members of the family present were Sir Hugh Jackson and Major Basil Jackson (sons), and others who attended the service were :—

Viscount Dillon, Mr. Frank Dicksee, R.A., Sir D. Y. Cameron, R.A., Sir George Frampton, R.A., Sir Reginald Blomfield, R.A., Sir Harry Lamb, Sir David Murray, R.A., Sir Goscombe John, R.A., Sir John Burnet, Mr. S. Melton Fisher, A.R.A., Mr. Adrian Stokes, R.A., Ian MacAlister, representing the President of the Royal Institute of British Architects; Major H. C. Corlette, representing the Institutes of Architects of Australia.

The Late Mr. John Slater

A PERSONAL MEMORIAL BY PAUL WATERHOUSE

In the summer of last year a merry and very friendly company sat down together to the number of thirty or forty for the pleasure of being in John Slater's company. I was just going to write "to do honour to John Slater," but that wording would have been wrong, for honour was what Slater never sought, and what we wanted to give him was affectionate thanks. There was no special reason for the date chosen; it is true that Slater had recently expressed a wish to be relieved of the chairmanship of the Practice Standing Committee, but, as the official report of the unofficial gathering states, "it had in it no note of farewell," and our friend, the guest of the evening, if he was an old friend, showed in his brilliant speech no signs that age had made thefts from vitality. Some of us knew that his life was not free from burdens of the body, but we knew also that he had in him a driving force, call it pluck or will-power, which would always sooner see a duty and do it than foresee a labour and shrink from it.

I shouldn't like to say of any man that he was at his best as a diner-out; certainly I would not say it of Slater because it would be untrue. He was at his best in the countless intricacies of a perfect labyrinth of unremunerative toil, which for over forty years he lavished upon our Institute.

Certainly if a man is at his best when he is devoting great energy, great personal skill and unusual tact to purposes which are hidden from public observation and which often fail to receive even the full gratitude of those who share with him the obscurity of the service, then Slater's moments of triumph were to be found in those hours during which he laboured, often unsuspected by his colleagues, to bend some tedious wrangle to a right decision or in the little crises where, after sitting silent through a long debate, he would suddenly address the chair with a suggestion so clear, so lucid and so logical that we all immediately adopted it as the consummation of our *own* penetration. Wisdom is a rare gift. Slater had it, and with it what the Prayer Book calls "a right judgment."

This made him, of course, an excellent arbitrator, and the cases which came under his judgment in this capacity were frequent and important. His judicial sense seemed innate. There was no haste in his conclusions, his hearing of evidence was patient, and, above all, his bearing was that of a man of critical power and of weight. His membership (as the Institute's representative) of the Tribunal of Appeal (London Building Act) since 1909 was an outward testimony to our confidence in his powers of this class, but I suspect that there are countless numbers of brother architects who, recalling experiences in every class of legal dispute, from party wall worries to light and air claims, could rise up and call him "blessed," not merely for scores of wise decisions given from the arbitrator's chair, but perhaps still more for gentle influence wisely exercised in cases where, having been invited as a witness, he has acted as the suppressor of unwise litigation.

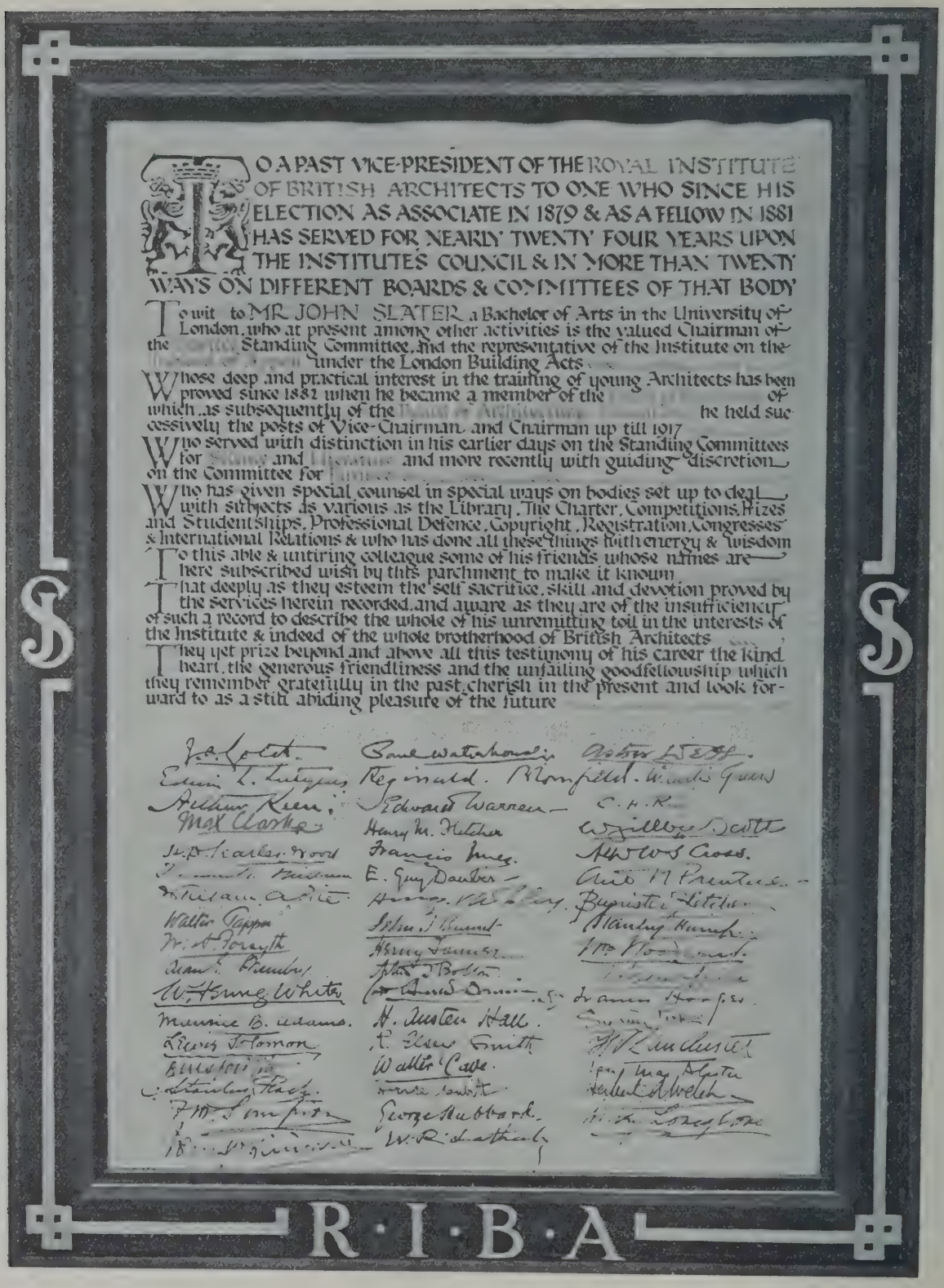
Personally, I looked upon him as a *rock* in these matters, and would never have been happy in a court with him on the other side. For with his gift of judgment went character.

If I withheld just now the suggestion that Slater was at his best among a company of fellow-diners it was only because I wanted to reserve this particular crown for the unobtrusive labours in which brain, persuasion and discriminative skill were so generously placed at the service of his fellows; but in truth those who saw and knew nothing of this life of laborious devotion must often when they met John Slater in company have thought that his powers as the maker of an adroit speech or as the teller of a crisp anecdote were his staple merchandise. On that night in June 1923, when he gave answer to Sir Aston Webb and to the other friends who joined in handing him a written expression of affectionate homage, he did so in a speech which made everyone present recognise him as a master in the art of good-fellowship and of clever utterance.

He was a very popular member of certain dining clubs and a close and valued friend to at least one such club of which he was not a member. As a clubman in the ordinary sense he was also outstandingly successful in that quiet way which is the only road to the prestige of affection. A good many members of the Athenæum are feeling his absence to a degree which they will never admit.

The friendship in my own case dates from the entrance examination of the R.I.B.A. held in 1888. On that occasion I took what I suppose would be considered by most people a course certain to prevent the formation of a friendship between examiner and examined. I engaged, to put it plainly, in an altercation (on the subject of pseudo-dipteral temples) in which I claimed that I was right and the examiner wrong. It doesn't matter on which side the truth lay; either alternative is enough to give annoyance to the elder man and to brand the younger as impertinent. It was characteristic of Slater's nature that he allowed this untoward incident to become the basis of an ever-ripening acquaintance and friendship.

If John Slater's unostentatious activities had not


TO A PAST VICE-PRESIDENT OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS TO ONE WHO SINCE HIS ELECTION AS ASSOCIATE IN 1879 & AS A FELLOW IN 1881 HAS SERVED FOR NEARLY TWENTY FOUR YEARS UPON THE INSTITUTE'S COUNCIL & IN MORE THAN TWENTY WAYS ON DIFFERENT BOARDS & COMMITTEES OF THAT BODY
To wit to MR JOHN SLATER a Bachelor of Arts in the University of London, who at present among other activities is the valued Chairman of the Standing Committee, and the representative of the Institute on the under the London Building Acts
Whose deep and practical interest in the training of young Architects has been proved since 1882 when he became a member of the of which as subsequently of the he held successively the posts of Vice-Chairman and Chairman up till 1917
Who served with distinction in his earlier days on the Standing Committees for and and more recently with guiding discretion on the Committee for
Who has given special counsel in special ways on bodies set up to deal with subjects as various as the Library, The Charter, Competitions, Prizes and Studentships, Professional Defence, Copyright, Registration, Congresses & International Relations & who has done all these things with energy & wisdom
To this able & untiring colleague some of his friends whose names are here subscribed wish by this parchment to make it known
That deeply as they esteem the self sacrifice, skill and devotion proved by the services herein recorded, and aware as they are of the insufficiency of such a record to describe the whole of his unremitting toil in the interests of the Institute & indeed of the whole brotherhood of British Architects
They yet prize beyond and above all this testimony of his career the kind heart, the generous friendliness and the unfailing goodfellowship which they remember gratefully in the past, cherish in the present and look forward to as a still abiding pleasure of the future
R·I·B·A

PHOTOGRAPH BY MR. MAX CLARKE OF THE INSCRIBED PARCHMENT PRESENTED TO MR. SLATER AT A DINNER HELD IN HIS HONOUR ON 28 JUNE 1923

been so varied it would be claimed for him that his work for architectural education was his chief title to remembrance. He stood out in the early days of his associateship and fellowship as an architect of exceptional education. As a B.A. of the University of London in days when B.A.'s of any kind were not very frequent in our ranks he slipped naturally and eagerly into the little band of educational pioneers, and may be fairly said to have been one of those who bore the early load of the examination system on their backs. Even in those days examinations had their free-spoken critics. "You cannot make an artist by examination" was a frequent taunt, but Slater was one of those who knew and foresaw two things, one being that examination, if it cannot make an architect, can at least exclude "impossibles," and the other that it can and does make education a necessity. It is not too much to say that the really magnificent system of architectural schools of to-day, conducted as it is by men many of whom despise the very word examination, owes its origin, or at least half its parentage, to the men who in face of some opposition forced the examinations upon us and did their best even in the earlier days to prevent those examinations from being a mere turnstile for the crammed.

Slater's well educated mind was at that stage one of the Institute's most valuable assets. How long and how consistently he gave his services to that cause can be judged from the little summary of services which is printed below.

John Slater's unpaid labours of loyalty seem in our minds to overshadow his professional career—what wonder?

But the arduous career was there. He was articled to Professor T. Roger Smith, and the pupilage was remarkable from the fact that it coincided with the sojourn in the same office of no less a pupil than Thomas Hardy, who, when he took to the pen instead of the ruling pen, did not throw aside his remembrance of architecture.

With Roger Smith, Slater was responsible for the admirable little manual on classic architecture which two generations of students have found a useful stand-by.

Quite early in his career Slater took up with enthusiasm the subject of electric lighting, then in its infancy as a public illuminant, and, besides delivering a memorable paper on the subject at the Institute, he was engaged as architect for at least three generating stations—at Kensington, Notting Hill and Wood Lane.

It was in 1891 that he obtained his appointment as surveyor to the Berners estate, a professional responsibility for which he was admirably fitted and with which the activities of his architectural practice were throughout his subsequent life very largely connected in direct and indirect ways.

For several years his partner in practice was Mr. J. Melville Keith, and at the time of his death his business was associated with Mr. A. H. Moberly and with his son, Mr. J. Alan Slater, who, I understand, has been appointed personally to succeed his father in the Berners estate surveyorship.

It is something to be able to say of a lost friend that his greeting was always a smile. I can say that of Slater. I do say it. But it does not make it easier to bear the loss.

The late Mr. John Slater was elected Associate 24 February 1879; elected Fellow, 7 November 1881. Member of Council, 1886 to 1910. Vice-President, 1900 to 1904. Member of the Board of Examiners (Architecture), 1882 to 1910; Vice-Chairman, 1896 to 1907; Chairman, 1907 to 1910. Member of the Board of Architectural Education from 1904 to 1917; Hon. Secretary of Board, 1905 to 1912; Vice-Chairman, 1912 to 1914; Chairman, 1914 to 1917. Member of the Science Standing Committee, 1886 to 1891 and 1896 to 1897. Member of the Literature Standing Committee, 1891 to 1894; Member of the Practice Standing Committee, 1898 to 1901; Vice-Chairman Practice Standing Committee, 1919 to 1921; Chairman, Practice Standing Committee, 1921 to 1923. Member of the Finance Committee, 1902 to 1910; and Chairman, Finance Committee, 1903 to 1910. Member of the Library Management Committee, 1887 to 1891; Special Education Committee, 1887 to 1889; Special Charter and By-Laws Committee, 1887 to 1888; Special Registration Committee, 1887 to 1888; Competitions Committee, 1901 to 1906; Prizes and Studentships Committee, 1901 to 1911; Board of Professional Defence, 1904 to 1910; Copyright Bill Committee, 1910 to 1912; Registration Committee, 1912 to 1914; Constitutional Committee, 1913 to 1918; British Section, Comité Permanent International des Architectes, 1910 to 1923; R.I.B.A. Exhibition Joint Committee, 1922 to 1923; 7th International Congress Architects, 1906, Executive Committee; Finance Committee, Town Planning Conference, 1910; Lightning Research Committee, 1901. Represented R.I.B.A. on the University of London Architectural Education Committee, 1913 to 1916; at the Architectural Congress, Brussels. 1897; at the Royal Sanitary Instutute Congresses, 1902, 1907 and 1912; at Conference at L.C.C. on Part 5 L.C.C. (General Powers) Bill, 1909; on Consultative Committee of Board of Education with regard to Leaving Examinations from Secondary Schools, 1904. Member of the Tribunal of Appeal under London Building Act, 1909 to 1923.

A SELECTION FROM THE LIST OF WORKS CARRIED OUT BY MR. SLATER.

Electric Lighting Station, Wood Lane.* Electric Lighting Station, Notting Hill.* House for Colonel Crompton in Kensington Court.* Factory for Messrs. Schweppes, Hendon.* Berners Hotel. York Hotel. Factory for Messrs. Caley, Chenies Street. Messrs. Bourne and Hollingsworth's premises. Hostels in Store Street and Gower Street. Shop premises in Berners Street, Newman Street and Wells Street. Cottages and alteration at Garston Manor, Watford. Factory and garage for Messrs. Bourne and Hollingsworth, Ltd.

* Mr. Slater was solely responsible for these buildings. The remaining were executed either in partnership with Mr. J. M. Keith or Mr. J. Alan Slater.

It is with the deepest regret that the sad news of the sudden and unexpected death of Mr. Waterhouse has just been received as we are going to press.—EDITOR

THE SOCIETY OF ARCHITECTS AND THE COUNCIL OF THE R.I.B.A.

Council Dinner.

On Thursday, 11 December last, the President and Council of the R.I.B.A. were the guests of the President and Council of the Society of Architects. They were invited, by a happy inspiration, to dine with their hosts in the Georgian Rooms at the Piccadilly Hotel. But if we may judge by the friendly, genial, even affectionate, tone of all the speeches that evening, for there were several, the occasion was regarded by all present rather as a wedding breakfast. No doubt the good dinner, fine weeds, rich wine, and rare music did something to give new courage to both the young people who in this way prepared for a fresh start in life. There was certainly some "marriage of true minds" in view, since every figurative allusion used by those who spoke, in evident sincerity, turned thought in that direction. There was no feeling of being on the brink of some catastrophe, no sense of some fearful unconsidered plunge. But there was a confident air of sober certainty that both the parties had removed all old differences and were happy in the discovery of a new ground, and a fruitful means of permanent agreement. Unity in co-operation, give and take in the reconciliation of varying points of view, respect for the past, and a high regard for each other in the hopes and difficulties, successes and failures, of the future, these were the ideas, and aims, expressed by those who were called upon to suggest the feelings dominating each of the two corporate bodies expecting soon to be made one.

During the evening the President of the Society invited the Council of the R.I.B.A. to visit the city of Bath early next spring. On behalf of the Institute the proposal was welcomed. Major Barnes suggested that those who were able to go might find time for some informal discussion of certain large questions of policy that it will be necessary to bear in mind. He indicated that these architectural family affairs should be accurately surveyed and properly valued in the light of recent new developments.

H. C. C.

List of Members of the Society of Architects, and R.I.B.A. guests: Mr. A. J. Taylor (President of the Society of Architects) (in the chair), Mr. J. Alfred Gotch (President R.I.B.A.), Mr. H. V. Ashley, Mr. C. A. Barman, Major Harry Barnes (Vice-President R.I.B.A.), Mr. H. T. Buckland (Vice-President R.I.B.A.), Mr. L. H. Bucknell, Mr. C. McArthur Butler (Secretary of the Society of Architects), Mr. H. Chalton Bradshaw, Professor L. B. Budden, Mr. Walter Cave, Mr. M. Chesterton, Mr. George Coles, Major H. C. Corlette, Mr. E. Guy Dawber (Vice-President R.I.B.A.), Mr. P. M. Davson, Mr. R. Dircks, Sir Banister Fletcher, Mr. Henry M. Fletcher, Mr. H. S. Goodhart-Rendel (President, Architectural Association), Mr. E. J. Haynes, Mr. Arthur B. Hayward, Mr. A. J. Hope (President, Manchester Society of Architects), Mr. P. A. Hopkins, Mr. W. G. Ingram, Mr. Francis Jones, Mr. H. V. Lanchester, Mr. Ian MacAlister (Secretary R.I.B.A.), Mr. E. C. P. Monson, Mr. F. C. Moscrop-Young, Mr. E. J. Partridge, Mr. T. Taliesin Rees, Mr. Howard M. Robertson (Vice-President of the Society of Architects), Mr. W. H. Robinson, Mr. E. J. Sadgrove, Mr. N. D. Sheffield (Hon. Secretary of the Society of Architects), Mr. C. F. Skipper (Vice-President of the Society of Architects), Mr. W. H. Smith, Mr. L. S. Sullivan (Vice-President of the Society of Architects), Mr. Percy E. Thomas (President of the South Wales Institute of Architects), Mr. G. B. Tubbs, Mr. Percy B. Tubbs, Mr. Francis T. Verity, Mr. Thomas Wallis (Vice-President of the Society of Architects), Mr. Edward P. Warren, Mr. E. J. Williams, Mr. G. E. Withers.

SOCIETY FOR THE PROTECTION OF ANCIENT BUILDINGS.

11 *Gray's Inn Place, W.C.*1,
9 *December* 1924.

Dear Sir,—May I be allowed to follow up the note that appeared in the Journal for 6 December with a plea that more Institute members who are sympathetic to the aims and work of the S.P.A.B. should apply for membership of that society? It fulfils a function of considerable importance in our national life, and an accession of membership would not only be a great encouragement to its Committee but would materially assist towards enlarging the extent and effectiveness of the Society's work.—Faithfully yours,

Fredk. R. Hiorns [*F.*].

Mr. Frank Dicksee, who was elected President of the Royal Academy on the retirement of Sir Aston Webb, has been for twenty years an Honorary Associate of the R.I.B.A. Mr. Dicksee was elected A.R.A. in 1881, and R.A. ten years later. He has exhibited regularly at the Royal Academy since 1876.

Sir Edwin L. Lutyens, R.A., Vice-President of the Royal Institute of British Architects, has just been informed that he has been awarded the Gold Medal of the American Institute of Architects, and he has been invited to attend the Architectural Convention in New York in April, 1925, to receive the Medal in person.

This is the first occasion for seventeen years that the Gold Medal of the American Institute has been awarded to a British architect, the last occasion being in 1907, when it was awarded to Sir Aston Webb.

The Training of Craft Apprentices

REPORT OF THIRD GENERAL (BUSINESS) MEETING HELD ON 1 DECEMBER 1924
THE PRESIDENT, MR. J. ALFRED GOTCH, IN THE CHAIR.

At the Third General (Business) Meeting of the Royal Institute on 1 December, the President (Mr. J. Alfred Gotch) in the chair, in accordance with notice Mr. Francis Hooper moved the following resolution :—

> " To request the Council to consider and, if thought desirable, to approach the Master Builders' Association and the Building Trades Union, and to offer any assistance deemed suitable in furthering the training of craft apprentices."

Mr. FRANCIS HOOPER [*F.*] : The subject of this resolution is of urgent national importance. Notice of it was given when the last Government was in office. It was the aim of its authors to make plain through the Council of this Institute that architects throughout the Empire were earnestly desirous of finding a remedy for the present shortage of craftsmen in the building industry, which is second to none in vital importance to the public at large, as well as to their own existence. During the presidency of Sir John Simpson a most interesting conference upon similar lines took place which is still fresh in our memories. The spirit of the conference was admirable and most illuminating. The reluctance of lads to enter upon training, as now organised, is well recognised. Some causes for this are known, others need inquiry and thoughtful study. Solutions of the appalling problems of unemployment and its demoralising consequences upon the welfare of the State should be sought whole-heartedly by every man and woman of goodwill. The tendency at present is to create employment through public funds for so-called unskilled labour, thus tacitly discouraging those who should be trained in crafts.

The training of architects leads them to dignify their responsibilities and their work ; the same spirit needs to be fostered in all the crafts working with them. Many of our best public schools and colleges, as well as our secondary and elementary schools, already have workshops and craft classes. Herein lie great possibilities. Some of the instructors are alive to their opportunities, and they deserve esteem and every encouragement. There are some with certificates but little aptitude, satisfied to allow work on trivialities, with the result that the pupils are bored and their parents discouraged. Good drawings of work useful in every home would help to give zest in such schools, and might turn the tide at this critical time.

Owing to the regretted death of Mr. Arthur Belcher, Mr. H. D. Searles-Wood, whose keen interest in the problem is so well known, will second the motion. I think the Honorary Secretary has some valuable remarks to make upon what the Council has already done.

Mr. H. D. SEARLES-WOOD [*F.*] (in seconding the resolution) said : I very much regret the death of Mr. Belcher, who was to have taken this duty upon him.

The first point to which I wish to refer is the difficulty of obtaining boys ; the great want nowadays is bricklayers and wallers. They are the people who do the carcasing, and without the carcasing other craftsmen do not have the opportunity of coming in. The reason why the boys hesitate about going into bricklaying is, first of all, the lack of continuity of employment, owing to the termination of contracts, and also the inclement weather. The next point is the reluctance of employers to take apprentices, and there are several difficulties with regard to that. The first difficulty, taking the country at large, is that the possibility of technical training for these boys is not always easy to meet. Those who enter direct from the elementary schools, of course, have a very poor chance of getting into really serious work to begin with ; they are generally employed, for about the first two years, in bringing pots of tea and that sort of thing for the men. Boys who pass through a junior technical school, and have probably had three years' training, have a very much better chance ; but after these boys have passed through this preliminary training it has been found difficult to get them properly placed. I speak as Chairman of the Committee of the London County Council School of Building at Brixton, and we do endeavour to place all our boys who pass through our schools, and as a rule we are successful. But, unfortunately, we are unable always to insist upon apprenticeship. The reason for that is that the employers, taking them as a whole, hesitate to bind themselves to take in apprentices on account of the various fluctuations in their business. They cannot always see their way to employ the number of apprentices that they would like to.

Another difficulty which we have met with during the last two or three years is that, in the spirit of patriotism, they have accepted a number of ex-Service men who have gone through an intensive course of training, the committee who are interested in those men—naturally and very properly—having done all they could to induce employers to employ these ex-Service men, so that when we come with our fully qualified boys they say, " We are very sorry, but we are full up with ex-Service men." That is, of course, a passing phase, and will probably cease.

The next thing is that the London Building Trades Apprenticeship Committee's indentures require the attendance of apprentices one day a week at a technical institution, which is a very serious interference with the business arrangements of a shop ; and if these boys have to be sent away to jobs at a distance from home it is impossible for them to comply with the conditions. It has been suggested in the newspapers during the past week that that obstacle might be met by a modified form of correspondence classes, where the boys might be employed in cultivating the more technical branches of their training by means of correspondence. There is, I think, certainly something to be said for that arrangement.

What are the prospects of the boys who go into these crafts—what is the expectation in life of, say, the boy who qualifies as a bricklayer ? It is generally considered that if a boy goes in at the age of 15, he has got 45 years of good work before him, that is, putting his useful life

at 60. In these modern days, when 60 is quite young, probably a few more years could be added—that is what he has to look forward to.

There is the question of the number of apprentices we should want to grapple with the housing question. The most serious decline is in the bricklayers and wallers. In England and Wales the numbers were : In 1911, 102,750 bricklayers ; in London, 9,053. In 1901 the total was 113,995, so there was a drop of nearly 13,000 bricklayers in ten years. In 1921 the total number of bricklayers in London was 586, a decrease of 2,272. The figures for the whole country for the later period are not yet available. Taking the number of houses required per annum, according to the various estimates at 200,000 during the next twenty years, approximately 30,000 bricklayers will be required for the housing schemes only, and to maintain that number 700 apprentices would be required annually, of which 100 would be needed in the London area. I think it is possible that the London County Council would provide facilities for training that number in London at the various technical schools. As a matter of fact, they are contemplating building a new school of building in the neighbourhood of Hammersmith, so there will be three mono-technics : one at Hammersmith for the West, the Northern Polytechnic for the North of London, and the London County Council School of Building at Brixton for the South.

Supposing the London County Council were in a position to train 100 boys per annum in the building trades, no effect on the actual building could be felt for two or three years ; we must allow time for them to be fairly trained. So it would be absolutely necessary to have some augmentation of labour during those three years, and if it could be ultimately arranged between employers and operators in the industry I strongly recommend that such augmentation should be recruited from youths of 16 to 19 years of age. Even at this age they will experience great difficulty in becoming efficient craftsmen, and if they had not entered at the normal age it might be desirable to provide a short intensive training, say of three months, before such labour entered the industry, so that at all events they should acquire the " tool sense," and be instructed in certain of the fundamental principles of the craft. To water the industry with an excess of untrained labour would result in confusion and dissatisfaction.

I am well aware that the Council have already had a considerable amount of evidence given to them by various experts on this subject, and much of the matter I have given to-night has been communicated to the Committee. I think the object of this resolution is to urge the Council to continue their endeavours.

I have great pleasure in seconding the resolution.

Mr. ARTHUR KEEN [*F.*] (Hon. Secretary) : Can Mr. Searles-Wood explain why it is required that these apprentices should go back to the technical school for one day a week ? Why can't they take the whole of their technical school training and complete it before they become apprentices ?

Mr. SEARLES-WOOD : The apprenticeship scheme was made with a view to the application of general principles, and it does not always take into consideration that the apprentice will have passed through a technical school. Where apprentices have passed through technical schools they have an allowance of two years off their apprenticeship ; but it is essential that when they are in their work as apprentices they should still keep up their theoretical work.

Mr. KEEN : Can't they do that in the evenings ?

Mr. SEARLES-WOOD : Yes, they can, but if they are away on jobs it is difficult for them to do that, and that is where the correspondence schools idea comes in.

Mr. E. J. SADGROVE [*F.*] : I do not profess to know a great deal about the subject, but it seems to me that the proposer and the supporter of the resolution are visualising it from the point of view of the technical training—that is to say, the school training. It would be interesting to know if there are statistics to show whether the operative bricklayers of to-day passed through these schools of training. I have heard that the reason why there is a lack of apprentices in the bricklaying trade is that only a limited number of apprentices are allowed by the Unions to so many fully trained bricklayers. It seems to me that while these restrictive rules continue the number of apprentices will always be limited. Probably the Royal Institute, or other institutes, has not sufficient power to overcome the regulations of the Unions ; but you will never, I think, get a satisfactory solution of the bricklaying and other industrial problems until you get back to the state of things when what is commonly called " piece-work " was in vogue, and a man was allowed to earn according to his ability.

I cannot enter deeply into this question, because I do not know how far the Institute has had communications in relation to it, but it is a phase of the subject which, I think, the Institute might bear in mind.

Mr. KEEN : So far as the Institute is concerned, a committee was set up about a year ago to study the question of getting apprentices into the building trades, and we asked for the attendance of representatives of the Federated Building Employers and representatives of Building Trades Unions in order to confer with them and find out what the position was and what the difficulties were in relation to getting apprentices in. We took the evidence of the secretary of an association that existed for the purpose of securing apprentices for the building trades, and we also took evidence from the director of the Northern Polytechnic, who was much concerned in the matter. But we have never been able to get the attendance of employers and employees in the building trades ; one thing and then another have prevented their attendance. All the evidence we have taken seemed to me, broadly, to show that the building trade was not attractive to boys ; they all understand that men who work in the open air are at a very great disadvantage compared with men who work in factories—that they lose, perhaps, two days a week, commonly, in the winter time. That, and the fact that there are all kinds of other employments in which far less training is necessary but in which the wages are higher than in the building trades, militate against getting boys into the building industries. In such trades as plastering, for instance, the boys are not attracted by the idea of working in dirty materials such as the plasterer uses. In the few sittings held, with

Major Barnes in the chair, the evidence was that it was very difficult to get even the number of apprentices allowed by the arrangements which have been entered into between the operatives and the masters. I do not know how that difficulty is to be met. I feel a great deal of sympathy with the objections which have been raised. The other day I was visiting a job of my own, the building of a big garden terrace in the country, all bricklaying work out in the open air, with no protection for the men. It was a pouring wet day—it had been fine at first, and then it came on to rain heavily—and the men were standing under the trees waiting for the rain to stop, although it looked as if it would continue raining all day. I felt then that one could not wonder if men were not attracted to the building trade. The men were standing out of their job and their money until the rain left off. It is considerations of that kind which are largely responsible for the shortage of apprentices. I have felt for some time that the time for apprenticeship has gone by. We do not get the apprentices in the architectural profession that we used to ; they go to the schools, and my impression is that for the future we have to look to the technical colleges to train the men who will be employed in the building trades. At present there is a strong feeling that the men who have been through the technical colleges must serve their time as apprentices in the trade, but there is a difficulty about that, and I feel that we have got to complete the training of men in the technical colleges. It will mean a great extension of the syllabus of a technical college before it can turn men out able to work as journeymen, but it seems to me that the young men will have to be taken from the school to the technical college, and go straight from that to the works and earn as much as they can there.

Another difficulty is that the speculative builder is practically eliminated. I think men who are trained to the extent possible in the technical college might have been brought straight into the trade by the speculative builder, who usually is a man who has learned the trade himself, either as a carpenter or a bricklayer ; he would do the best he could for his employee, give him what he earned, and so gradually turn him out as a craftsman. Many a man has come into the trade that way, but very few come in that way now. As it is, I think technical colleges have got to be so equipped that they will be able to turn out men without there being much need for apprenticeship afterwards. The difficulty of getting boys taken on as apprentices is very great, and it is getting greater. We do not now get the men coming from the country to London as they used to. In those days wages were much lower in the country districts than in London, and the tendency was for men trained in the country to come to London ; but that tendency exists no longer, because wages are now almost the same in the country as in London ; but, having regard to the difference in the cost of living, the wages in the country are probably better than in London. It is, therefore, I think, to the technical colleges we have to look for the future.

Mr. HERBERT A. WELCH [*A.*] : As a member of the Committee who, with Mr. Keen and other members, has been looking into this question, I feel strongly that there are difficulties in the way of getting young men into the industry, owing to the various reasons given for its unattractiveness. We must, however, get over that difficulty. The industry has got to live, and we have to make it sufficiently attractive for the young man to pay reasonable attention to it and to give serious regard to the prospects it holds for him. I think the two greatest objections are those mentioned by Mr. Keen. One, so far as bricklayers and plasterers are concerned, is that it is a dirty job, and the average youngster to-day inclines towards the black coat, rather than don the apron and the dirty overalls of those trades. The second objection is the loss of time owing to the inclement weather, for which, obviously, the workman is not to blame. And there is, I think also, a third objection, which is that many boys who might be attracted to the industry find they have to spend two or three years in training, during which they get very little, or no, immediate monetary return. It is somewhat difficult for the parents of those boys to visualise what would be the prospects of a youngster in the building trade in 10 or 15 years in comparison with his prospects in an unskilled job for which better money was coming in immediately, but in which, in a short time, his position would be stationary. What is the remedy ? We cannot allow one section of the community to suffer loss on account of bad weather ; it is unfair and inequitable. But we are told that the fixing of wages in the industry had regard to the amount of time lost during the year by the workman. I think it would be met more attractively, and more effectually, if some form of insurance policy could be obtained from insurance companies against wet weather. If wet time could be insured against and the men paid their normal weekly wage, I think the amount which would have to be put on to the building costs would not be very considerable. The technical schools, while doing all that is humanly possible, have not in the past had quite the encouragement from the industry that they had the right to expect ; the young men coming out of technical schools have not in the past been absorbed into the industry to the extent which the school authorities had the right to expect. From what I can ascertain, in the future they will not have so much cause to complain along those lines. The unions themselves have of late relaxed to an appreciable extent the stringent rule with regard to the percentage of apprentices in the industry. Until recently, I think, one apprentice was allowed to every seven or eight journeymen employed by each individual builder. So if a small builder was in a position to employ six craftsmen, he could not introduce an apprentice, because he had not the minimum staff to permit it. They have adjusted that, I understand, in two important respects. One apprentice may now be taken for each three craftsmen, and they have altered the unit from the individual employer to the district of the Federation of Master Builders. That has been a distinct encouragement, and it has been brought about by the Board recently set up by the Government, which is constituted of employers, architects and employees. At present this is to apply only to housing work. I have no doubt that if it is found to operate satisfactorily—as I do not question it will—it will be extended to all building work ; if not in the proportion of one in three, to one in four or one in five.

Mr. ARNOLD F. HOOPER [*A.*] : As I understand it, the apprentice is apprenticed to the contractor, not to the actual operative, and it occurs to me that the suggestion to apprentice the young man to the operative builder, the workman, and put the operative back on to piece-work, would make it in the operative's interest to push forward his apprentice, so that he would get extra remuneration for the work put in. Then the operative bricklayer, in going from one contractor to another, as he does, would take his apprentice with him, and the bricklayer with whom the apprentice was working would have a greater interest in the apprentice. In the cases I have seen, the bricklayers have no interest whatever in the apprentice working with them. I suggest some system of issuing certificates to the operative workmen, first, second and third grade, and that apprentices should be apprenticed only to first grade men.

Mr. SEARLES-WOOD : There are three parties to the apprenticeship : the Apprenticeship Council, the employer, and the apprentice, who is represented by his parents or somebody in the place of a parent. So if there is any failure on the part of the builder or the employer owing to lack of trade to provide enough work for the apprentice, there can be an application to the Apprenticeship Council, and the Council can transfer the apprentice to somebody who has the work, in which case he does not lose his instruction. I should like to enter a caveat against the statement that in the good old days the speculating building trade was a good training for the craftsman.

Mr. KEEN : I do not say it was a good school, but a possible school ; it is a way in which boys who have been trained in a technical school can be brought into the industry.

With regard to Mr. Arnold Hooper's remarks, it seems obvious that a boy apprenticed to a master builder has not the same interest taken in him as would be the case if he were apprenticed to the man he actually works with and learns his trade from. Until we can get back to the time when there were master-bricklayers who could take on work at piece rates, I am afraid the suggestion is impossible and I can see no way out except by technical colleges.

Mr. WELCH : References have been made to piece-work under present-day conditions, but I have found that is very unpalatable. If we want to encourage output I think it would best be secured by some form of bonus. The only satisfactory way for the industry to progress is in some ratio in proportion to its output ; there can be no other sound economic system in regard to work. There is no doubt that the old piece-work system was iniquitous, and I use the word " iniquitous " after very careful consideration. I feel that the pay must be based upon the return given for that wage. The mere fact of paying a man so much per hour to be on the job does not meet the case at all ; he must give an agreed return for that pay, and we should not encourage the means of getting that return by employing an unduly dominating or domineering foreman. I do not think the piece-work system will return in the form we have known it, but I think with careful handling there is a prospect of some measure of bonus system being introduced at a not very distant date. By this I mean that every man should be paid a flat rate of wages per hour, and for that, if he be a bricklayer, he must lay a certain minimum number of bricks ; if he be a plasterer, so many yards of plaster ; but in so far as he manages to exceed that minimum quantity he will receive a bonus at the end of his week's work. That is a system of payment by results, and it is based upon sound economics. It is not good that an individual should stand easy for any length of time, and if it is not good for the individual it cannot be good for the nation. I therefore suggest that we should endeavour, as tactfully as we can, to get some measure of bonus introduced, by which a man benefits by his efficiency when he exceeds a certain agreed minimum of output.

Mr. A. E. BULLOCK [*A.*] : Another aspect which has not been touched on to-night is that of the attitude of the Trade Unions, the Federation of Employees in relation to the masters. I had an instance of that recently in the case of an employee who showed me several letters which the Federation of Employees had written to him because he had refused to join the union ; they were really blackmailing letters written to employers with regard to employing this man, who was a bricklayer.

With regard to a system of bonus, as against piece-work, that is important, but you must first get over the Trade Union antipathy and opposition to the whole matter.

(Mr. Keen took the chair.)

Mr. KEEN : I think the weak point in Mr. Hooper's proposal is that he does not indicate the way in which the Institute can effectively take action.

Mr. FRANCIS HOOPER : I think we must begin at the top, and instead of talking about what the workman should do, think of what the masters, the employers, should do with regard to the problem of these crafts. As long as we talk of " only a bricklayer," and " only a plumber," we are not doing any good. It is on the lines of the references to those crafts in *Punch*. Many boys read *Punch*, and in that journal I never see a reference to plumbers except to ridicule them. We ought to go to the public schools and see what the masters there are doing in regard to technical training ; I think many of them might improve their methods in this respect. For instance, instead of making egg-cups and pipe-racks, the pupils could be shown how to make trays and things which can be useful in the home. More imagination is wanted in the schools, and I think architects could help there. I visited a school recently at which the master said " There is one thing we should be grateful for ; we have got a lot of boys, and we want to help in the housing. If we could only get a good working drawing of a kitchen dresser, which was well thought out, one which could be put in the homes we so much need, the boys would become keen on it, and so would the parents." If we were to be on the alert we could do many things to add dignity to these classes and impart enthusiasm to the teachers.

Mr. KEEN : There is no question that the difficulty is to make the trade sufficiently attractive to bring boys into it, and, somehow, to increase the remuneration. The difficulty is the suspicion that Trade Unionists have of anything like payment by results ; they will not have this system if they can avoid it. A short time ago a question

arose on the Council on the matter of wood-carving, upon which I was asked to see the representatives of the Wood-carvers' Union. Two of them came to see me. I talked to them about payment by results. The Secretary of the Union said : " This is how it works. We had, lately, a case where aeroplane blades were wanted very urgently, and it was put to the men that they should take it on on a piece-work basis. It was considered that 65 hours' work was required to make a blade, and the price was adjusted on that basis. The men went ahead, and they did a blade in 47 hours. The next thing that happened was that all the men who were working on those terms got the sack in a short time, and soon afterwards another lot of men were taken on, and they were told this particular job represented 47 hours' work, and they were offered the price equivalent to that." He added : " That is what happens every time, and the men are always beaten on it ; the masters always come out on top." I do not wonder they are not anxious to have piece-work. I said : " Why don't you, as an alternative, grade yourselves, putting the best men in the highest grade, and let every man be paid according to his ability ? " He said : " As far as carvers are concerned, we do that." They have five grades. A man who is a skilful worker puts himself in a high grade, and if he cannot get enough of the best work, he takes work of a lower grade and a lower rate of remuneration, and it works fairly well. When men are paid a high rate, you expect a high output from them. It was really the case in the old piece-work system that the masters did beat them at it. But now, when Unions have so much power that they can counter that tendency and can look after their members, they may find that it works out much better than they anticipate. I wonder that the best of the men have put up with the present condition of things, and that they do not insist on getting piece-work and receiving proper payment for it.

It is now my duty to put the resolution.

Carried unanimously.

Allied Societies

THE WESSEX SOCIETY OF ARCHITECTS.

Inaugural Meeting at Bristol.

The members of the Wessex Society of Architects celebrated the inauguration of their first session on 21 November at Bristol. The newly-formed Wessex Society is the outcome of the federation of the Bristol Society of Architects, which was founded in 1850, with the Gloucestershire Architectural Association, which was formed sixteen years ago.

The new Society covers the counties of Gloucester, Somerset, Wilts and Dorset, this being the area allotted by the Royal Institute of British Architects, to which the Society is affiliated.

The first President of the Society is Mr. G. C. Lawrence [*F.*], R.W.A., the Vice-Presidents being Messrs. W. S. Skinner [*F.*] (President of the Bristol Society of Architects), and G. P. Milnes (President of the Gloucestershire Architectural Association), the Honorary Secretary, Major H. Stratton Davis, M.C., M.S.A., and the Honorary Treasurer, Mr. T. A. Skinner [*A.*].

An inaugural luncheon was held at the Red Lodge, the head-quarters of the Bristol Savages, when the chair was taken by the President.

Among those present were Mr. A. J. Taylor (President of the Society of Architects), Mr. Arthur Keen (Hon. Secretary of the R.I.B.A.), Mr. Ian MacAlister (Secretary of the R.I.B.A.), Major Harry Barnes (Vice-President of the R.I.B.A.), Mr. Percy E. Thomas (President of the South Wales Institute of Architects), Mr. W. S. Skinner (President of the Bristol Society of Architects), Mr. G. P. Milnes (President of the Gloucestershire Architectural Association), and the Rev. Canon James O. Hannay.

Mr. A. J. Taylor proposed the toast of " The Royal Institute of British Architects," and said that for some forty years the profession had been mothered by two societies who had been working on different lines and who had not always seen eye to eye. The ideals and aims of both bodies were identical, and they had only needed to come closer together to realise this. There was no need for two separate societies, and he hoped they could now go forward with one object in view. The negotiations had been brought to their present position largely by the kindliness and courtesy of the members of the Royal Institute.

Mr. Arthur Keen, who first responded, said that the Wessex Society of Architects had a career of great usefulness before it, and he wished it all prosperity. He liked the name, for it perpetuated history and allowed for any extension that might come. The Royal Institute had been in existence for nearly 100 years. It was originally a learned society, and it had been remarked that it was no longer a learned society, but had become a professional society. It certainly had become a professional Institute. but it was untrue to say that it had ceased to be a learned society also. It was far more so than ever. Education occupied a great deal of its activities, and it possessed one of the finest architectural libraries in existence. In all its activities the Institute was helped and supported in every way by the provincial societies, and he could not say too much in appreciation of the work of the provincial societies and their value to the Institute. One of the great objects of the societies should be to get a better standard of work. The distressing lack of taste that was so apparent had arisen within the past century, and architects could not altogether escape blame for this state of affairs. He did not know how this was to be remedied except by education. The various architectural schools were doing fine work in this direction, and he believed that the new School of Architecture in Bristol promised to be very successful. By means of such schools much could be done to promote good taste in building.

Mr. Ian MacAlister, who also replied, said that practically all the members of the Institute outside London belonged to the allied provincial societies. He always thought of the allied societies as the Institute outside

London: they were the very life-blood of the Institute, which, with its numerous branches all over the Empire, was developing into an immense organisation with great potentialities.

Mr. W. S. Skinner proposed the health of the guests.

Mr. G. P. Milnes said the members of the Gloucestershire Architectural Association much appreciated the federation that had taken place between their society and Bristol, and he hoped that in time it would extend further. Nothing but good could come from unity, and it was inspiring to be there that day and to find that so many had come from a distance to wish them God-speed in their work.

The Rev. Canon J. O. Hannay, who responded, said many Englishmen knew of the Irish by reports and tradition and from what they read in books, and were liable to judge by that. He had himself formed an opinion of the people of the West of England in the same way, but when he came among them he had an extraordinary and agreeable surprise. He had to revise his whole conception of the West Country people, and he was delighted with the welcome they had given him.

Major Harry Barnes, in proposing "The Wessex Society of Architects," said that, however deep might be their devotion to the Royal Institute of Architects, he could conceive that it would not be so great as to the Society they had just brought into being. They would never really express themselves to the people completely until they realised that variety and unity which would only come when the great provincial areas were fully revived and took an active part in the varied activities which made up the complete civilisation in which they lived. There are few things, if any, which could best be conducted from London unless they got vigorous life from the provincial societies. They were now becoming an efficient organisation, and were not only establishing a great number of provincial bases, but were becoming a great Imperial Institute. They, as a profession, had organised not for the purpose of enduring—for they were the first profession and would be the last—but that they might be inspired with a consciousness that they had a great part to play in the life of the community.

Mr. P. E. Thomas, who also responded, said that he would like to convey to them from his society in South Wales their best wishes for the success and prosperity of their New Wessex Society. Their societies had been friends for a good number of years, and in South Wales they felt great interest in their brothers across the Channel, and believed that the new society would play an important part in the work before them.

The President of the Wessex Society (Mr. G. C. Lawrence), in responding, referred to the formation of the new society. There had been a union of the Gloucestershire and Bristol Societies, and with that enlargement there were great possibilities before them. He thought that the result of the union was bound to be successful, because following the example of the Institute they had determined to put service first. They were in no sense a trade union. They existed first to serve architecture, next to serve the public, then to serve the future generation of architects, and lastly to serve themselves. He believed that the society which had had so happy a start was bound to have a long and successful future.

In the evening there was a large gathering of distinguished visitors and members of the Wessex Society at a reception held at the Royal West of England Academy, to meet the Rev. Canon Hannay (George A. Birmingham), who gave an address entitled "Emotions in Stone."

Canon Hannay said that when he accepted the invitation to address them there were three things open to him. The first was to have sat down and looked up the subject of architecture, and he might have produced quite a respectable lecture which might have pleased some of the audience, for they could not all be architects, but he would not have taken in the members of the society. He might have said that he did not know anything about the subject, but that he knew what he liked and have talked about that. It might have been a straightfoward plan, but it would have been a little narrow, because it meant that he would be assuming an attitude superior to the judgment of the experts, inasmuch as it would suggest that the thing he liked was the real thing. It might be a truly British attitude and one which had built up the Empire, but being an Irishman he was afraid he would not be able to carry it through. There only remained, therefore, the third course of the layman who knows nothing about art or architecture, but could only speak of the experience of emotion and feeling which certain buildings gave him. Buildings did give them certain emotions. They would go into a house and say "This is cheerful," and to another and say "This is gloomy." That had little to do with the architecture of the house. They might go into a house of any kind of architecture and have those feelings, and it did not depend upon the aspect of the house, whether it was north or south, or the weather or the furniture. The feeling that came to them was something in the house itself. He went on to give some of his own experiences in this respect. When he went into the Cathedral in Pisa in Italy he was conscious of a feeling of peace. In the Pantheon he got the same emotion of peace, but it was different. Its austerity moved him in a different way. He proceeded to refer to St. Mark's, Venice, and to St. Peter's, Rome. He did not know how far they had followed him in his line of thought, but perhaps they would understand better what he meant when he said that there was an emotion very common on entering a church. It was a feeling that could not be expressed in words. Some churches gave them little emotion at all, and others a great deal. Coming back to houses, he said, did they ever know a house in which large families of children had been brought up generation after generation which was not cheerful? And was it not a fact that the houses where old people had lived lonely lives for a long time had a quiet gloom about them. The spirit of the building was due to those who used it rather than to the architect who designed it or the workmen who built it.

THE WESSEX SOCIETY OF ARCHITECTS.

R.W.A. School of Architecture.

Annual Exhibition and Distribution of Prizes.

The R.W.A. School of Architecture held its annual exhibition and prize-giving in the School Studios on Monday, December 1st. Dame Janet Stancomb-Wills, D.B.E., President of the Royal West of England Academy,

made the presentations : the chair being taken by Mr. Maurice E. Webb, D.S.O., F.R.I.B.A., vice-president of the Board of Architectural Education of the R.I.B.A.

In his opening speech Mr. Webb said that he had been associated with the school since its first inception and had cause for the utmost satisfaction in the great success achieved by it during the short period of its existence, his one regret being that its present somewhat precarious financial condition accorded ill with its high state of efficiency as a school, a common experience unfortunately with the early days of most educational institutions. He was pleased to be able to announce that Dame Janet Stancomb-Wills had decided not only to lend her support to an appeal for funds but herself to head the subscription list. The appeal would come with great force in the West of England when it was realised that the school was the only one of its kind from the Severn to Land's End.

In his report of the year's work, the Headmaster, Mr. G. D. Gordon Hake [*A.*], commented upon the enthusiasm of the students and expressed his satisfaction at the results attained in so short a time. Of the students who had entered and passed the June Examination of the R.I.B.A. Mr. W. J. Thrasher had headed the list. This success, as well as the fact that Mr. R. H. Brentnall had been chosen to compete in the final round of the Victory Scholarship, was evidence of the high standard which had been attained. He welcomed the addition to the staff of Mr. E. H. Button [*A.*], Ashpitel Prizeman, 1923. Special interest attached to the activity of the senior students, undertaken at the request of the Bristol Kyrle Society, in the form of lectures to children in elementary schools, followed by visits to buildings of historic interest, with a view to fostering in the rising generation a due sense of civic pride and responsibility. The success of this experiment could be gauged by the fact that the local Education Committee had requested that it might be repeated.

The prizes were then presented.

In a short address following upon her presentation of the prizes Dame Janet referred to her recent experiences as Mayoress of Ramsgate when, on inspecting newly completed almshouses of charming and delightful design, she found them to be devoid of provision for the washing of the garments of the otherwise fortunate inmates—a lapse of a kind which would never occur were architects to confer with the womenfolk interested when approaching the problem of a domestic building. By all means let houses be charming in appearance, but let them also be thoroughly practical in their arrangements.

In proposing and seconding the vote of thanks to Dame Janet and to Mr. Webb, Mr. G. C. Lawrence, president of the Wessex Society of Architects, and Mr. F. N. Cowlin, chairman of the Council of the Royal West of England Academy, laid emphasis upon the indebtedness of the school both to Dame Janet and to Mr. Webb for support and encouragement.

The proceedings ended with an inspection of what proved an interesting exhibition, attention being attracted by a "Roman Composition," the work of Mr. J. H. Bourne. This drawing, exhibited with other work of the school at the recent International Congress on Architectural Education, was adjudged to be the best of its type and was selected for reproduction in the report of the Congress.

LOCAL HISTORY RECORDS.

Mr. C. B. Willcocks [*F.*] the Honorary Secretary of the Reading Society of Architects, has forwarded an account of the work that has been done in connection with the Berkshire Branch of the Local History Records Scheme which was founded in March 1924. The work is under the direction of a committee composed of representatives of the chief county societies interested in such matters. The well-known antiquary, the Rev. P. H. Ditchfield, is chairman, and excellent progress is being made with the collection of records. The Committee has already local correspondents in almost two-thirds of the parishes of the county. There is also an Oxfordshire branch of the scheme, of which the Rev. H. E. Salter is chairman. Mr. Willcocks in his account gives a description of the many interesting discoveries that have been made.

NOTES FROM THE MINUTES OF THE COUNCIL MEETING.

1 *December* 1924.

Registration of Probationers.

On the recommendation of the Board of Architectural Education, the Council decided to accept the Senior Certificate Examination of the Ministry of Education, Northern Ireland, in support of applications for registration as Probationer R.I.B.A., provided the certificate covers the required subjects.

Godwin Bursary and Wimperis Bequest.

On the recommendation of the Board of Architectural Education, the Council approved the Memoirs and Sketches submitted by Mr. W. T. Benslyn, A.R.I.B.A., Godwin Bursar 1923.

Illegal Use of the R.I.B.A. Affix.

The Council were informed of two cases in which the R.I.B.A. affix had been illegally employed by non-members of the R.I.B.A., and it was decided to take strong action in the matter.

Reinstatement.

Major L. M. Wells-Bladen was reinstated as a Licentiate of the R.I.B.A.

THE HENRY SAXON SNELL PRIZE.

The subject given by the Sanitary Institute for the Henry Saxon Snell Prize in 1924 was " Improvements in the Sanitary Conditions of Underground Dwellings and Small Underground Workshops." Eleven essays were received, and the prize of fifty guineas and the silver medal of the Sanitary Institute was awarded to Mr. E. Thomas Swinson, M.R.San.I. Supplementary awards were made to Mr. Edward E. Barks, A.R.I.B.A., and Mr. F. R. Jelley, A.R.I.B.A., for two of the other essays which showed considerable merit.

INSURANCE OF BUILDINGS DURING COURSE OF ERECTION.

Architects would greatly assist the Architects' Benevolent Society if they would insert a clause in their contracts to the effect that the builders are to insure their buildings during the course of erection in an approved insurance office through agency of the Architects' Benevolent Society.

Notices

THE FIFTH GENERAL MEETING.

The Fifth General Meeting (Business) of the Session 1924-1925 will be held on Monday, 5 January 1925, at 8 p.m., for the following purposes:—

To read the Minutes of the Meeting held on 15 December 1924; formally to admit members attending for the first time since their election; to proceed with the election of the following candidates for membership, whose names were published in the JOURNAL for 22 November 1924 (p. 55) and who have been found by the Council to be eligible and qualified for membership according to the Charter and Bye-laws and recommended by them for election :—

AS FELLOWS (3).

LAY : CECIL HOWARD [*A.* 1912], Aldringham, Leiston, Suffolk. Proposed by P. D. Hepworth, E. Stanley Hall, Robert Atkinson.

LOWRY : ROBERT [*A.* 1916], 33, St. James's Street, S.W.1 ; Denham Hill, Denham, Bucks. Proposed by W. Curtis Green, H. V. Lanchester, Sir John J. Burnet.

WRATTEN : EDMUND LIVINGSTONE [*A.* 1902], 18, Queen Anne's Gate, Westminster, S.W.1 ; "White Cottage," Warlingham, Surrey. Proposed by Arthur Keen and the Council.

AS ASSOCIATES (9).

DAWSON : JAMES STOTT [Passed six years' course at Robert Gordon's Colleges, Aberdeen—Exempted from Final Examination after passing Examination in Professional Practice], 23, View Terrace, Aberdeen. Proposed by Reginald T. Longden, A. Marshall Mackenzie, George Sutherland.

DONALDSON : ROBERT WEIR, B.Arch. Liverpool [Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice], 56, Hertford Road, Bootle, Liverpool. Proposed by Professor C. H. Reilly and the Council.

HISCOCK : LESLIE ROBERT [Passed five years' course at Architectural Association—Exempted from Final Examination after passing Examination in Professional Practice], 44, Wodeland Avenue, Guildford. Proposed by Robert Atkinson, E. Stanley Hall, Annesley H. Brownrigg.

NORBURY : WILLIAM ALAN, B.A. [Passed five years' course at Manchester University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice], Broadmead, Broad Lane, Hale, Cheshire. Proposed by Dr. Percy S. Worthington, Francis Jones, J. W. Beaumont.

OWEN : WILFRED HERBERT [Passed five years' course at Manchester University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice], 37, George Street, Cheetham Hill, Manchester. Proposed by Francis Jones, Dr. Percy S. Worthington, Paul Ogden.

SHANKS : GEORGE FERGUSON [Passed five years' course at Glasgow School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice], 193, Kent Road, Glasgow. Proposed by John Keppie, John Watson, Geo. And. Paterson.

SILCOCK : HUBERT SPENCER, B.Arch. Liverpool [Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice], Brandhoek, Walton Road, Stockton Heath, Warrington. Proposed by Professor C. H. Reilly, S. Percy Silcock, E. Vincent Harris.

TURNER : RALPH HENRY, B.Arch. Liverpool [Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice], "Claremont," St. Andrew's Road, Bridport, Dorset. Proposed by Professor C. H. Reilly, H. S. W. Stone, Alfred H. Hart.

WILLIS : REGINALD JOHN, M.A. [Passed five years' course at Manchester University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice], The School of Architecture, Victoria University, Manchester. Proposed by Francis Jones, Dr. Percy S. Worthington, Arthur W. Hennings.

THE WALLACE COLLECTION.

The Art Standing Committee have made arrangements for a visit to the Wallace Collection, Hertford House Manchester Square, W.1, on Saturday, 10 January 1925, at 2.45 p.m. A lecturer from the staff of the Collection will speak on the paintings. As the number attending the visit must be limited, Members and Licentiates desirous of taking part are requested to make early application to the Secretary R.I.B.A., 9 Conduit Street, W.1.

VISITS ARRANGED BY THE ART STANDING COMMITTEE.

The following is a list of the visits arranged for the Session by the Art Standing Committee. The visits will take place on Saturday afternoons except where otherwise stated, and Members and Licentiates are cordially invited to attend. Cards for each visit will be issued, and can be obtained on application to the Secretary R.I.B.A.

1.* The Wallace Collection.—Saturday, 10 January 1925.
2.* The Sir John Soane Museum.—Saturday, 28 February 1925.
3. The Tower of London.—Saturday, 14 March 1925.
4.* Adelaide House and Britannic House.—Saturday, 18 April 1925.
5. Westminster Abbey (including the Jerusalem Chamber, the Triforium and St. Stephen's Crypt).—Wednesday, 29 April 1925.
6.* Ham House.—Saturday, 16 May 1925.

Probationers R.I.B.A.

Since January 1924 the following have been registered as Probationers of the Royal Institute :—

ADAMS : ALEXANDER, "Prospect House," New Road, Blackpool.

ALDERSON : GEORGE WILLIAM, 12, Ashton View, Harehills, Leeds.

ALI : SYED AZIZ, The Architectural Association, 35, Bedford Square, W.C.1.

AMOS : GEOFFREY STUART, 50, Glencoe Avenue, Seven Kings, Essex.

ANDREW : LEONARD ARTHUR DUNCAN, The Manse, Smarden, near Ashford, Kent.

ANDREWS : LAWRENCE VICTOR, 100, King Street, Loughborough.

* N.B.—It will be necessary to limit the numbers for these visits. In these cases tickets will be balloted for if the number of applications exceeds the limit prescribed by the proprietors or their agents.

ARTHUR: JOHN ABERCROMBY, "Allerton," Rosebank Road, Edinburgh.
AVEYARD: MARK, 9, Park Road, Batley, Yorks.
BARBER: FREDERICK, "Woodcote," Oatlands Chase, Walton-on-Thames.
BARNABE: BRUNO ALBERTO, 6 Southwood Avenue, Highgate, N.6.
BARNES: THOMAS SCOTT, Morden Lodge, Morden, Surrey.
BELSEY: ALBERT JOHN GUY, Lansdowne Hotel, Calne, Wilts.
BHUTA: GOPALJI MULJI, c/o Messrs. Gregson, Batley & King, King's Building, Fort, Bombay.
BINNINGTON: RAWDON NETTLETON, 28 Hull Road, Withernsea, Hull.
BOREHAM: CYRIL ERNEST WALTER, 55 The Albany, Albany Road, Camberwell, S.E.5.
BOURNE: JOHN HENRY, 24 Cotham Road, Cotham, Bristol.
BOWMAN: FREDERICK, Station Lane End, Pelton, Co. Durham.
BRENCHLEY: ARTHUR REGINALD, "The Loggia," Station Road, Herne Bay.
BRIGHT: GEORGE EDWARD, "Heathcote," Station Road, Westcliff-on-Sea.
BROADBENT: RICHARD, 21 Hopwood Bank, Horsforth, Leeds.
BROWN: VIVIAN HENRY ALLPORT, "Ivy Dene," Weston, Stafford.
BRUCE: ROBERT MALCOLM, Wesley Villa, Chester-le-Street, Co. Durham.
BRUNSDON: FREDERICK CHARLES, 114 High Street, Eton, Bucks.
BUCKLEY: FRANK EDWIN, "Allandale," 10 Westmoreland Road, Southport.
BULL: DENIS, 51 Grosvenor Avenue, East Sheen, S.W.14.
BUNCE: GERALD EDGAR, 76 Howard Road, Westbury Park, Bristol.
BURROWS: FRANCES MURIEL, 158 Warwick Street, S.W.1.
BUTLING: GEORGE ALBERT, 79 Blantyre Road, Liverpool.
BUTTON: FREDERICK CHARLES, 11 Waterford Road, Fulham, S.W.6.
BYROM: THOMAS, 18 Woodlands Crescent, Golders Green, N.W.
CARLISLE: WILLIAM GEORGE BRUCE, 9 Canvey Road, Leigh-on-Sea.
CARRELL: FRED LINFOOT, 4 Sorley Street, Sunderland.
CARTLIDGE: WILFRED GEORGE, 135 High Lane, Burslem, Stoke-on-Trent.
CARTWRIGHT: THOMAS NELSON, 7 Pelham Crescent, The Park, Nottingham.
CASTELLO: LIONEL JAMES, 45 Turner's Hill, Cheshunt, Herts.
CHAMBERS: FRANK PENTLAND, 18 Alleyn Park, Dulwich, S.E.21.
CHAPMAN: REGINALD CHARLES, Monksdene, Sutton, Surrey.
COATES: HORACE LISTER, 51a Abbeygate Street, Bury St. Edmunds.
COCORULLO: AUGUSTINE, 12 Sidney Grove, Newcastle-on-Tyne.
COOMBE: LEONARD ELSWORTHY, 147 Beaufort Road, St. George, Bristol.
COOPER: GEOFFREY CHRISTOPHER, The Two Gables, Box Ridge, Purley.
COOPER: REGINALD WILLIAM GAZE, "Wilstead," College Street, Long Eaton.
COX: ERIC ARTHUR, 34 Dyne Road, Brondesbury, N.W.6.
COX: RONALD EDWARD, 34 Dyne Road, Brondesbury, N.W.6.
CROSSLEY: FREDERICK HAMER, 15 Arnside Road, Wallasey.
CRUDDAS: ERIC, 191 Askew Road, Shepherd's Bush, W.12.
DARK: FRANK WILLIAM, 54 Hornsey Rise, N.19.
DAWES: LESLIE REGINALD, 1 Bridge Cottages, Plympton, South Devon.
DAWSON: JAMES STOTT, 23 View Terrace, Aberdeen.
DEITERS: FREDERICK WILLIAM, 3 The Beeches, Goddard Avenue, Newland Avenue, Hull.
DENBIGH: GEORGE DYSON, 21 Newton Drive, Blackpool.
DENNISS: JAMES, 42 Hedon Road, Hull.
DERHAM: REGINALD DOUGLAS, 77 Reads Avenue, Blackpool.
DILKS: JOHN STUART, East Gate, Bridgwater, Somerset.
DUNCAN: DAVID RONALD, 79 Cleveleys Road, Clapton, E.5.
EARLE: CLIFTON WILLIAM, 1 Wyndham Street, Brighton.
EAST: THOMAS WILLIAM, "Church Steps," Aylesford, Kent.
EDWARDS: DONALD THOMAS, St. Dunstan's, High Wycombe, Bucks.
EDWARDS: LAURENCE CARLTON, 31 St. Hilda Street, Beverley Road, Hull.
EGAN: JOHN EDWARD, 7 George Street, Mowbray, Cape Province, South Africa.
ENTHOVEN: RODERICK EUSTACE, 3 Cleveland Gardens, W.2.
FAIRHURST: PHILIP GARLAND, Garth, Wilmslow, Cheshire.
FAIRHURST: ROBERT FRANCIS, 437 Lord Street, Southport.
FARMER: ARTHUR HENRY, 106 Albion Street, Southwick, Sussex.
FERGUSON: CHARLES WILLIAM BANNISTER, "Heatherley," Wellington College, Berks.
FLEMING: DOUGLAS EDGAR, 29 Belsize Square, Hampstead, N.W.3.
FORSTER: EDWARD, 1 Leaside Avenue, Muswell Hill, N.10.
FOX: CECIL HENRY, 51 Saltram Crescent, Maida Hill, W.9.
FRANCIS: JOHN HENRY MELVILLE, 49 Abbey Road, Great Grimsby.
FRASER: JAMES MILNER, 73 Western Road, Woodside, Aberdeen.
FREEBREY: ERIC KNIGHT, 16 Overdale Road, Ealing, W.5.
FRYER: GEORGE WILLIAM GRAHAM, 28 Montrose Avenue, Kilburn, N.W.6.
GALE: ARTHUR HARRY, 16 Ridgdale Street, Bow, E.3.
GALE: MARGARET GODDARD, 9 King's Bench Walk, Temple, E.C.4.
GARDHAM: HENRY EDGAR, 11 Trelawney Terrace, Launceston, Cornwall.
GATLEY: GEOFFREY HIGSON, Rockshire, Disley, Cheshire.
GIBBS: STANLEY FRANK, 7 Devonport Street, Hyde Park, W.2.
GILLESPIE: GEORGE DANIEL, 100 Lower Mount Street, Dublin.
GRANT: GARROW GREGOR, "The Wrens Nest," Speldhurst, Kent.
GRANT: HORACE HENRY, c/o Messrs. Chick & Bartholomew, 100 Club Arcade, Durban, South Africa.
GREEN: HARRY ALBERT, 26 Westbourne Road, North End, Portsmouth.
GREEN: JAMES DUDLEY, 93, Kensington, Liverpool.
GRIFFITH: ROBERT GWILYM, Melbourne Stores, Pwllheli, North Wales.
GUY: RODERICK NELSON, "Dalkeith," Crescent Road, South Woodford, Essex.
GWYNN: LLYWELYN AP, 26 Llandough Street, Cathays, Cardiff.
HALL: ARTHUR LEONARD, "Northcote," Ongate Gardens, Dollis Hill, N.W.2.
HALL: GEORGE ALBERT VICTOR, c/o School of Architecture, University of Liverpool, Liverpool.
HALLOWAY: THOMAS BANKS, 10 Brigham Road, Cockermouth.
HAMILTON: MALCOLM JOHN, 16 The Drive, Walthamstow, E.17.
HARLEY: THOMAS, 85 Charlotte Street, W.1.
HARRINGTON: DENNIS EDMUND, 53 The Oval, Kennington, S.E.11.
HARRISSON: THOMAS WINDER, 12 Church Road, Ashford, Kent.

HAY : GEORGE STANLEY, " Tweed House," 58 Grove Road, Wanstead, E.11.
HEAD : ERIC HUGO, 34 Whitehall Gardens, Acton Hill, W.3.
HEATON : FRANK HALLIWELL, 40 Park Road, Wigan, Lancs.
HELM : WILLIAM REX, 32 Eastbourne Street, Glodwick, Oldham.
HEWARD : GEORGE TYRER, 35 Castle Street, Bolton.
HEWITT : ALFRED, 138 Loughborough Park, Brixton, S.W.9.
HILL : HENRY ERSKINE, The Vicarage, Horbury, Wakefield.
HOBDAY : RALPH, 34 Chepstow Place, Bayswater, W.
HODGE : DENIS CHAPMAN, 181 Ladbroke Grove, W.10.
HOLLAND : JAMES HARRY, P.O. Box 27, Cape Town, South Africa.
HUME : BERTRAM STUART, Albany Hotel, Lancaster Gate, W.
IMMELMAN : STEPHANUS RHYM, 5 Oak Avenue, Gardens, Cape Town, South Africa.
INGHAM : JOHN YATES, 81 Windsor Terrace, Padiham, Lancs.
JACKSON : RONALD, 32 Elm Road, Wembley, Middlesex.
JACKSON : WILLIAM THEODORE, 89 Beechdale Road, Brixton Hill, S.W.2.
JAMES : JOHN LEWIS THOMAS, Clifton House, Clarbeston Road, Pembrokeshire.
JARY : HARVEY, 122 Warley Road, N.S., Blackpool.
JENKINS : WILLIAM VICTOR, 20 Manville Road, Wallasey, Cheshire.
JOHNSON : ALLAN, 10 Gathorne Avenue, Roundhay Road, Leeds.
JOHNSON : GEOFFREY MILES, Elm House, Hills Road, Cambridge.
JOHNSON : JOHN WILLIAM, 36 The Boulevard, Anlaby Road, Hull.
JONES : ANNE FAREWELL, " Brenley," Mitcham Common, Surrey.
JONES : JOSEPH CARTMEL, 36 Collingwood Road, West Hartlepool.
JURY : ARTHUR EDWARD, 41 Donegall Place, Belfast.
KAY : JAMES, 228 Tempest Road, Dewsbury Road, Leeds.
KING : MARION GERTRUDE KATIE, 37 Bonham Road, Brixton Hill, S.W.2.
LAMBERT : LESLIE CHARLES, c/o A. A. Ritchie McKinlay, Esq., 34-36 Oamaru Buildings, Smith Street, Durban, South Africa.
LANCASHIRE : JOHN EDWIN, " West Lawn," Fulwood Park, Sheffield.
LEWIS : KENNETH FRANCIS, Y.M.C.A., The Promenade, Cheltenham.
LIGHT : EDWARD JOSEPH GEORGE, " Nansholme," Peak Hill, Sydenham, S.E.26.
LINFORD : ALBERT LOUIS, " Kelvestone," Cannock, Staffs.
LOCK : BERTRAND, 33 Lansdowne Grove, Neasden, N.W.10.
LUCIA : WILLIAM MARTIN, 75 Holland Road, Kensington, W.14.
LUXTON : ARTHUR CHASTEY, 99 Fore Street, Saltash, Cornwall.
MACGILLIVRAY : IAN D., 38 Ullet Road, Liverpool.
MACKNESS : ARTHUR REGINALD, The Causeway, Chippenham, Wilts.
MCNEIL : PATRICK, " Oakbank," Dollar, Clackmannanshire.
MANGIN : ARMAND LOUIS, 19 George Street, Euston Road, N.W.1.
MANT : CECIL GEORGE, 8 Lansdowne Road, Duke's Avenue, Muswell Hill, N.10.
MARSHALL : GODFREY HIBBERT, Thorpe Road, Norwich.
MARSHALL : HEDLEY BERNARD, 160 Harlaxton Drive, Lenton, Nottingham.
MARSHALL : THOMAS LESLIE, 5 Gladstone Street, Scarborough.
MARTIN : JOHN LESLIE, " Hatherlea," Moston Lane, New Moston, near Failsworth, Manchester.
MILESON : HAROLD, 49 Bulwer Road, Leytonstone, E.11.
MILLER: JOSEPH CHARLES, 101 Stanmore Road, Mount Florida, Glasgow.
MOBERLY : SYLVIA GRACE, 18 Gordon Square, W.C.1.
MORGAN : EVAN, "Bryn Hywel," Clase Road, Morriston, Glam.
MONROE : LEONARD, 27 Victoria Road, Penarth, S. Wales.
MOORE : HAROLD WILLIAM, 52 Dynham Road, West Hampstead, N.W.6.
MORRIS : CYRIL LAURENCE, 28 Smith Street, Chelsea, S.W.3.
MOTAFRAM : JAMSHEDJI DOSSABHOY, 265 Lohar Street, Dhobi Talav, Bombay 2, India.
MOWBRAY : WILLIAM BAWDEN, High Croft, Christchurch Park, Sutton, Surrey.
NICHOLS : JOHN FRANCIS, 11 Bank Plain, Norwich.
NORBURY : WILLIAM ALAN, " Broadmead," Broad Lane, Hale, Cheshire.
O'CONNOR : VINCENT, 147 Heaton Park Road, Newcastle-on-Tyne.
ORFEUR : RONALD FRANCIS, 9a Hyde Park Mansions, Marylebone Road, N.W.1.
OWEN : CEDRIC GEORGE ROSSER, " The Rhyddings," Brynmill, Swansea.
OWEN : WILFRED HERBERT, 37 George Street, Cheetham Hill, Manchester.
PADMORE : ROBERT BARTON, Cathedral School, Winchester.
PAKINGTON : HON. HUMPHREY ARTHUR, 9 Arundel Gardens, W.11.
PARKER: THOMAS HORSFALL, 68 Burlington Road, Blackpool, S.S.
PATERSON : ERIC ARNOLD, 65 Clarendon Road, Fulwood, Sheffield.
PEARCE : GERALD WOODSEND, " Beechwood," Green Lane, Halton, Leeds.
PESCOD : HAROLD GEORGE, 15 Wansbeck Road, Jarrow-on-Tyne, Co. Durham.
PHILLIPS : FRANCIS HARRY EDWARD, 9 Sylvan Hill, Upper Norwood, S.E 19.
PICKERING : CHARLES EDWARD, 73 Fernlea Road, Balham, S.W.12.
PRATT : ARTHUR WILLIAM, 63 Dragon Avenue, Harrogate.
PRICE : ARTHUR JOHN, The Firs, Meaford, Stone, Staffs.
PRINCE : EDWIN FRANCIS EUART, 12 Sutton Court Road, Sutton, Surrey.
QUINN : IVAR O'LEARY, 32 Richmond Road, Roath, Cardiff.
RANDELL : ROY JAMES, c/o E. J. Tench, Esq., 11 Bank Plain, Norwich.
REA : ARTHUR JOHN, Balsall Common, near Coventry.
REID : CHARLES FINDLATER, Eastholm, Wishaw, Lanarkshire.
RICHARDS : JOHN GOWER, 56 Swansea Road, Merthyr Tydfil.
RICHARDSON : LESLIE ALBERT JAMES, 50 Keston Road, East Dulwich, S.E.15.
RICHMOND : FRANK GAYTON, " Turleigh," Bradford-on-Avon, Wilts.
ROBERTS : CHARLES WILLIAM, 5 Seafield Road, Lytham, Lancs.
ROBINSON : HENRY RAYMOND, Glebe House, Warmsworth, near Doncaster.
ROBSON : FREDERICK ERNEST, 23 Noble Terrace, Gateshead-on-Tyne.
ROGERS : ARTHUR LEIHRS, 174 Amesbury Avenue, Streatham Hill, S.W.2.
ROGERS : ELSIE, 23 Albert Road, Whalley Range, Manchester.
ROTH : DANIEL, 64 Antill Road, Bow, E.3.
SARGENT : RAYMOND JAMES, 61 Parkwood Road, Boscombe, Bournemouth.
SCHULTZ : ISRAEL, 1a Hunton Court, Hunton Street, E.1.
SEABORN-JONES : WALTER, c/o Hookworm Campaign, Central Office, College Road, Brisbane, Queensland, Australia.
SHARMA : PURSHOTTAM LAL, School of Architecture, Sir J. J. School of Art, Bombay, India.
SIMPSON : ALRIC JAMES ANTHONY, " Westbury," Otlery Road, Wynberg, Cape Province, South Africa.

SISSON : MARSHALL ARNOTT, Hucclecote Court, near Gloucester.
SKURRAY : THOMAS EDWARD DEANE, Summerfield, Abingdon, Berks.
SLATTER : LEONARD JOHN, ' Watersmeet," Chestfield, Whitstable, Kent.
SMITH : CHARLES EDWIN GORDON, 19 Homend Street, Ledbury, Herefordshire.
SMITH : CHARLES HUBERT BROAD, 8 Cross Street, Basingstoke.
SMITH : JOHN FRANCIS GEORGE, 171 Whitehorse Lane, South Norwood, S.E.25.
SMITH : STANLEY HAROLD, 54 Drapers Road, Enfield, N.
SMITH : SYDNEY WALTER JOHN, " Kenilworth," 40 Ashbourne Grove, East Dulwich, S.E.
SOPER : STEPHEN FREDERICK EDMUND, 66 North Side, Clapham Common, S.W.4.
SPENCE : ALBERT, 94 Mytton Street, Moss Side, Manchester.
SPENCER : JOHN VIVIAN, 2 Ashburnham Grove, Manningham, Bradford.
SPRAY : ALEXANDER MOFFATT, Brockhurst, Ashover, near Chesterfield.
STEELE : FRANK REGINALD, " Newlands," Stockton Brook, Stoke-on-Trent.
STEEVENS : ARTHUR EWART, " Bronhaul," Amersham Hill, High Wycombe, Bucks.
STEWART : ALEXANDER MALCOLM, c/o Mrs. Noel, 38 Fairfield Road, Inverness, Scotland.
STIRRUP : GORDON, Billinge End, Blackburn.
STOREY : LESSIE MASSOM, " The Lilacs," Pateley Bridge, Yorks.
STYLES : FRANK, 58 Hart Road, Erdington, Birmingham.
TABER : EDWIN ATKINSON, 12 Hilton Road, nr. Potternewton Park, Leeds.
TARGETT : CYRIL HENRY, 21 High Street, Dartford, Kent.
TATTERSFIELD : LEONARD, " Glen Maye," Union Road, Heckmondwike, Yorks.
TAYLOR : LAWRENCE CYRIL RALPH, 5 King Street, Saffron Walden, Essex.
THOMAS : BRYAN WILLIAM RYLANDS, " Briar Dene," North Road, Cardiff.
THOMAS : HAROLD LLEWELLYN TAYLOR, 41 Sunnyside Road, Weston-super-Mare.
THOMPSON : JOHN WILLIAM HERBERT, 109 Woodfield Road, Balsall Heath, Birmingham.
THOMPSON : THOMAS BERNARD, 83, Scalpcliffe Road, Burton-on-Trent.
THOMSON : THOMAS FINLAYSON, " The Laurels," Avenue Road, Trowbridge, Wilts.
THORNLEY : HARRY, 1 Seafield Road, Blackpool.
THWAITE : THOMAS EDWARD SENIOR, 10 Lamplugh Road, Bridlington, East Yorks.
TIMMIS : GORDON JAMES, Cuddington Hall, Malpas, Cheshire.
TIMS : THOMAS OWEN, 5 Station Road, Porth, Rhondda Valley.
TIPLING : ARTHUR RAYMOND, 55 Borough Road, Darlington.
TOLSON : JACK RANSOM, 66 Shaftesbury Avenue, Roundhay, Leeds.
TOWNSEND : HENRY TERENCE, 13 Brierley Street, Nottingham.
TOWNSEND : HORACE ALFRED, 29 Mountney Road, Eastbourne.
TOWNSEND : JOHN BERNARD, 3 Harvey Lane, Leicester.
TURNER : ALBERT, West View, Staining Road, Poulton-le-Fylde, Lancs.
TYLER : STANLEY HERBERT, 205 Fox Lane, Palmer's Green, N.13.
UNSWORTH : HERBERT, 17 Gordon Avenue, Bolton.
VAN DER RIET : HENRY BERTHAULT, 6 Church Square, Cape Town, South Africa.
VAUGHAN : REGINALD, School House, Trinity Street, Barrow-in-Furness.
WAKEFORD : HENRY ALLEN, 184 Clapham Road, S.W.9.
WAKEFORD : LIONEL ARTHUR, 18 Hilldown Road, Streatham, S.W.16.
WALKER : RAYMOND WILLIAM, 5 Springwell Terrace East, Northallerton, Yorks.
WALLIS : KATHARINE MABEL, 165 Pittshanger Lane, Ealing, W.5.
WARDLE : LIONEL TALLENTYRE, Quarrington Vicarage, Coxhoe, Co. Durham.
WATT : LESLIE ALEXANDER, 24 Maple Avenue, Ste Anne de Bellevue, Province Quebec, Canada.
WEBBER : RALPH VICKERY, 3 Elm Grove, Taunton.
WELLS : REGINALD FRANK, 119 Southfield Road, Oxford.
WESTON : NORMAN ERNEST GODFREY, 29 Clarendon Road, Egremont, Cheshire.
WHATLEY : DENNIS LAWSON, The Vicarage, Linden Road, Bournville, Birmingham.
WHEATER : HARRY DONALD, " Pendennis," Barnpark Road, Teignmouth, Devon.
WHERRETT : LUCIAN ROY, 12 Merlin Road, Manor Park, E.12.
WHITBY : GEORGE STANLEY, 31 Sandhurst Street, Aigburth, Liverpool.
WHITE : EDMUND JULIAN, 213 Marlborough Avenue, Hull.
WHITEHEAD : STANLEY, " Lynntors," Cornwall Road, Sutton, Surrey.
WHITELEY : FRANK, 67 South Drive, Chorlton-cum-Hardy, Manchester.
WILLIAMS : CHARLES PHILIP, " Beechwood," Baring Road, Grove Park, S.E.12.
WILLIS : REGINALD JOHN, School of Architecture, Manchester University, Manchester.
WILLS : THOMAS THEOPHILUS, The Fold, Spring Vale, Wallasey, Cheshire.
WILSON : PERCY ROY, " Cedarhurst," Sault Ste Marie, Ontario, Canada.
WINTER : ARTHUR PERCY, 69 Deodar Road, Putney, S.W.15.
WOODROW : STANLEY BLUNDELL, Wollaston, near Wellingborough, Northants.
WORTHINGTON : THOMAS SHIRLEY SCOTT, Grove House, Mobberley, Cheshire.
WRAY : KENNETH FLETCHER, Strathmore, Conisbro', near Rotherham, Yorks.
WRIGHT : DONALD ARTHUR, " Mapledene," Great Missenden, Bucks.
WRIGHT : SYDNEY, 23 Wesley Street, Waterloo, Liverpool.

Competitions

UGANDA RAILWAY NEW OFFICE, NAIROBI.

Apply to the Crown Agents for the Colonies, 4 Millbank, Westminster, S.W.1. Closing date for receiving designs, 28 February 1925. Assessor : Mr. William Dunn, F.R.I.B.A. Deposit £1 1s.

RECONSTRUCTION OF THE KONINGINNE BRIDGE, ROTTERDAM.

With reference to the announcement of this competition in a recent issue of the JOURNAL, His Majesty's Consul-General at Rotterdam has informed the Department of Overseas Trade that he has received from the Rotterdam municipal authorities a series of 72 questions and answers amplifying and explaining the technical points which arise in connection with the plans.

As a translation would involve considerable time and difficulty His Majesty's Consul-General suggests that any British firm desiring specific information on the subject should communicate with him direct.

BETHUNE MEMORIAL TO THE MISSING.

The Imperial War Graves Commission desire Members and Licentiates of the Royal Institute to be reminded that applications to take part in the above Competition from persons other than those who had signified their intention of competing on or before 1 January 1924 cannot be considered. Due notice of this regulation was published in the Professional Press on various occasions during August and September, 1923.

MASONIC MEMORIAL COMPETITION.

Apply to The Grand Secretary, Freemasons' Hall, Great Queen Street, W.C.2. Last day for applying for conditions, 23 August 1924. Deposit, £1 1s. Closing date for receiving designs, 1 May 1925. Assessors: Sir Edwin Lutyens, R.A. [*F.*] (appointed by the President); Mr. Walter Cave [*F.*], Mr. A. Burnett Brown, F.S.I.

MANCHESTER ART GALLERY.

Apply to the Town Clerk, Town Hall, Manchester. Closing date for receiving designs, 20 January 1925. Assessors: Mr. Paul Waterhouse, F.S.A. [*F.*], Professor C. H. Reilly, O.B.E. [*F.*], Mr. Percy S. Worthington, Litt.D., F.S.A. [*F.*].

Members' Column

"COUNTRY LIFE" COMPETITION.

LICENTIATE with great experience of black-and-white illustration offers his services in the preparation of perspectives for the above. Has visited site and has all particulars.—Box 6124, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

ROOMS TO LET.

MEMBER has two rooms to let near Bedford Row; £70 a year inclusive. Telephone: Museum 6501.

MR. ALFRED HILL [*A.*].

MR. ALFRED HILL [A.R.I.B.A., M.T.P.I.] has relinquished his appointment as Architect to the Housing and Town Planning Committee, City of Lincoln, and resumed practice as Architect, Surveyor and Town Planner. Cornhill Chambers, Cornhill, Lincoln. Trade catalogues requested.

CHANGE OF ADDRESS.

ON and after 1 December 1924 the address of Concrete Publications, Limited ("Concrete and Constructional Engineering," "The Concrete Year Book" and "Concrete Series" of books) will be 20 Dartmouth Street, Westminster, S.W.1. Telephone: Victoria 4581.

HOUSE FOR SALE.

WIDOW of A.R.I.B.A. offers for sale, or would let furnished, convenient seven-roomed house and bungalow, containing five rooms, situated on half an acre of land, overlooking magnificent Cornish coast. Price £1,250. References.—Apply, Mrs. K. Philp, "Haven View," Millhook, Poundstock, North Cornwall.

APPOINTMENTS WANTED.

SENIOR, with all round life experience of first class work in London and Home Counties, requires change.—Box 2189, c/o Secretary R.I.B.A., 9 Conduit Street, W.

A.R.I.B.A. and F.S.I. with considerable experience of general practice, including quantities, is anxious to obtain a position where his professional knowledge can be more fully utilised. London and country experience. Full particulars on application to Box 1112, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.1.

APPOINTMENTS VACANT.

Two Architectural Assistants required by a firm of architects in Hong Kong. Applicants should preferably be unmarried, well educated, skilled in design, and accustomed to town work. Three years' agreement. Commencing salary 450 Hong Kong dollars per month, rising to 475 Hong Kong dollars and 500 Hong Kong dollars per month in the second and third years respectively. Passage paid.—Apply Box 1612, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.1.

WANTED, in a Crown Colony, a young Architect as assistant on a four-years agreement and salary £400 per annum. He should be an Associate of the R.I.B.A. and unmarried. Enquire in the first place to the Secretary R.I.B.A., 9 Conduit Street, London, W.1.

A FELLOW would be grateful to any member who would send the Editor of the Journal the names of two thoroughly qualified and reliable Clerks of Works required for institutional work next spring.

DISSOLUTION OF PARTNERSHIP.

THE firm of William Hill & Son, of which Mr. Victor Bain [*A.*] was a member, has been dissolved as from 1 November last, and Mr. Bain is continuing in practice in the offices of the late firm at the same address, 38 Albion Street, Leeds.

WILL man or woman of simple tastes, perhaps lover of books and garden, join architect and wife in small country house. Baker Street 25 mins. Quiet and privacy. Intelligent cooking. Reasonable expenses.—Box 1441, c/o Secretary R.I.B.A., 9 Conduit Street, W.

Minutes IV

SESSION 1924-25

At the Fourth General Meeting (Ordinary) of the Session 1924–1925, held on Monday, 15 December 1924, at 8 p.m., Mr. J. Alfred Gotch, F.S.A., President, in the Chair.

The attendance book was signed by 29 Fellows (including 10 Members of the Council), 38 Associates (including 2 Members of the Council), 5 Licentiates, and a very large number of visitors.

The Minutes of the Meeting held on 1 December 1924 having been taken as read were confirmed and signed by the Chairman.

The Hon. Secretary announced the decease of the following members:—

Mr. John Slater, Associate 1879, Fellow 1881, Vice-President 1900-1904;
Mr. A. W. Sheppard, Associate 1894, Fellow 1924;
Mr. H. W. Lockton, Licentiate 1911;

and it was RESOLVED that the regrets of the Royal Institute for the loss of these members be recorded in the Minutes.

The Secretary read the names of Candidates nominated for election on 5th January 1925.

Mr. Arthur J. Davis [*F.*] having read a Paper on "Shop Fronts and their Treatment" and illustrated it by lantern slides, a discussion ensued and on the motion of Captain Ivor Stewart-Liberty, M.C., seconded by Mr. A. S. Gaye, Commissioner of Woods and Forests, a vote of thanks was passed to Mr. Davis by acclamation and was briefly responded to.

The Meeting closed at 10.10 p.m.

Arrangements have been made for the supply of the R.I.B.A. JOURNAL (post free) to members of the Allied Societies who are not members of the R.I.B.A. at a specially reduced subscription of 12*s.* a year. Those who wish to take advantage of this arrangement are requested to send their names to the Secretary of the R.I.B.A., 9 Conduit Street, W.1.

Members sending remittances by postal order for subscriptions or Institute publications are warned of the necessity of complying with Post Office Regulations with regard to this method of payment. Postal orders should be made payable to the Secretary R.I.B.A., and crossed.

R.I.B.A. JOURNAL.

Dates of Publication.—1924: 8th, 22nd November; 6th, 20th December. 1925: 10th, 24th January; 7th, 21st February; 7th, 21st March; 4th, 25th April; 9th, 23rd May; 13th, 27th June; 18th July; 15th August; 19th September; 17th October.

Restoration of Shop, Pompeii

Shop-fronts and their Treatment

BY A. J. DAVIS [*F.*]

[*Read before the Royal Institute of British Architects on Monday*, 15 *December* 1924]

THE subject I am dealing with to-night is one of considerable interest both to shop owners and their architects.

The commercial and æsthetic developments which have taken place during recent years in the treatment of the shop-front clearly show that after a period of neglect this problem is at last receiving the attention it deserves, and that the merchant is no longer content to leave the decorative treatment of his window to the tender mercies of the contractor and fitter. The modern shop-front is essentially a problem requiring artistic consideration. It is one which appears frequently in most architects' practices, and its many aspects present opportunities where skill and taste can be displayed to the advantage of the client, and to the embellishment of the street in which his premises are situated. It has become more and more recognised that an appropriate shop-front is in itself a commercial asset of no small value, in the same way as the beauty of a picture is enhanced when presented in a well-designed frame.

A great deal has already been written on this matter, but I think it will be of some interest to go over the ground again and discuss the subject from various points of view.

I propose to confine my remarks to the smaller shop, excluding the fronts of large departmental stores, which present special features and are outside the scope of this paper.

History provides us with very limited information regarding the shop of ancient times. In the early days of civilisation commerce was confined principally to the open market-place. As far as we know, the Egyptians, Assyrians, and even the Phœnicians, the great traders of the ancient world, were content to carry on their business in the Agora or market-place of the city.

It seems evident that, apart from the primitive trading booth, the workshop where the craftsman made and sold his wares is probably the earliest type of shop. An idea of its appearance may be gathered from a French restoration of the premises of an ancient Egyptian coppersmith, and it is apparent that from this the bazaar gradually developed, in appearance somewhat similar to those seen in Oriental countries to-day.

In the Græco-Roman towns of Central Italy excavation has revealed the remains of shop premises, giving evidence of their existence as early as the second century B.C. There we find that the outer parts of the houses facing the principal thoroughfares were utilised as shops, the fronts of which were open to the street. The counter, frequently of masonry, was in most cases arranged so that customers could make

their purchases, if they wished, without going inside. Large jars were often set in it, to serve as receptacles for the wares and edibles exposed for sale. Sometimes on the side next to the wall there were little steps on which measuring cups and other vessels were placed. At the inner end there was occasionally a depression over which a vessel could be heated. The shop-front was closed with upright, overlapping boards set in small grooves at the top and bottom. Over the shop, about 12 feet above the ground, there was an upper floor or "pergula," along the open front of which was a balustrade, and a separate set of shutters was provided.

In ancient Roman times the shops were built low, and over them small closed rooms were made, frequently accessible from the street by means of a narrow door and stairway. Shops with their upper floors are advertised for rent in the painted inscriptions found at Pompeii, of which the following is an example :—

> To let for the space of five years, from the 15th day of August next to the 15th day of the sixth August thereafter, the Venus Bath, fitted up for the best people, shops, rooms over shops, and second storey apartments in the property owned by Julia Felix, daughter of Spurius Julius.

It is therefore evident that at this early period in Italy shops were already in existence ; but in England and on the Continent no information can be ascertained of similar premises until as late as the thirteenth century.

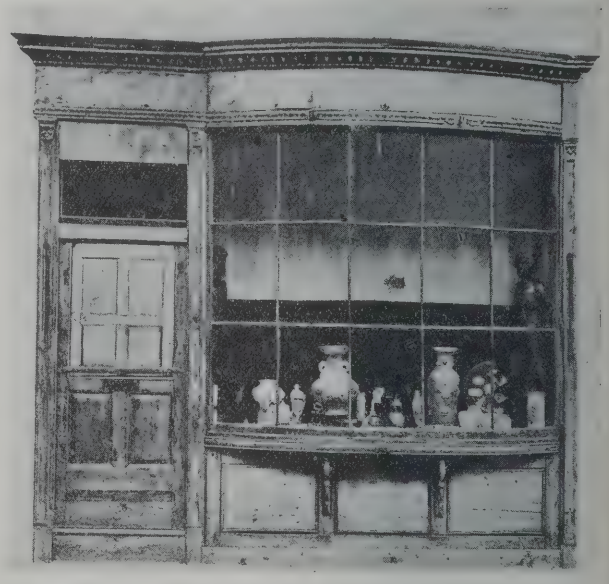
In the history of the Middle Ages frequent reference is made to the open market, the stall and the saint's day fairs ; but shops, as such, were simple covered sheds projecting in front of dwellings, and the few establishments of this nature were confined to the principal streets. As a rule, the merchant used storerooms for warehousing purposes, and the chief opportunity he had for displaying his goods was during the annual fairs, when the bulk of the trade was carried on.

These storerooms were usually half underground, and vaulted with stone. The room on the first floor over the storeroom was called the "solar." This was the chief dwelling room of the family of the merchant, and was approached by an external flight of steps. There are several small well-preserved houses of this type remaining at Kidwelly, in South Wales, and at Winchelsea, near Rye, and a number of cellars at Chester, where the upper part of timber construction has been destroyed by fire.

Possibly the celebrated "Rows" at Chester and Shrewsbury derive their origin from this circumstance. In rebuilding the town after a great fire, it was found more convenient to take a passage out of the solars, and to form a sort of bazaar for shops upon the top of the vaults, than to use the cellars themselves, which faced a narrow roadway and were otherwise inconvenient.

There was further provision for storage in the roof, used chiefly for corn and other perishable goods, which were hoisted up by means of a crane. On the Continent these storerooms in the roof, with their cranes, are still in common use, notably at Amsterdam, where the absence of cellars has obliged the merchants to provide warehouse accommodation in extensive gables overhanging the canals.

Very limited progress is to be recorded in the thirteenth and fourteenth centuries, but advance may be noted in the early part of the fifteenth century, when we find that shops had their fronts so made that the lower half of the boarding which secured the opening could be let down and supported on legs, forming a platform about



Shop Front in South Kensington Museum, out of Petty France, Westminster

3 feet high on which goods were exposed for sale. The upper part, being hinged at the top, could be lifted up to give protection from rain and sun. A few instances remain of shops of the fifteenth century, the most perfect being that at Butchers' Row, Shrewsbury.

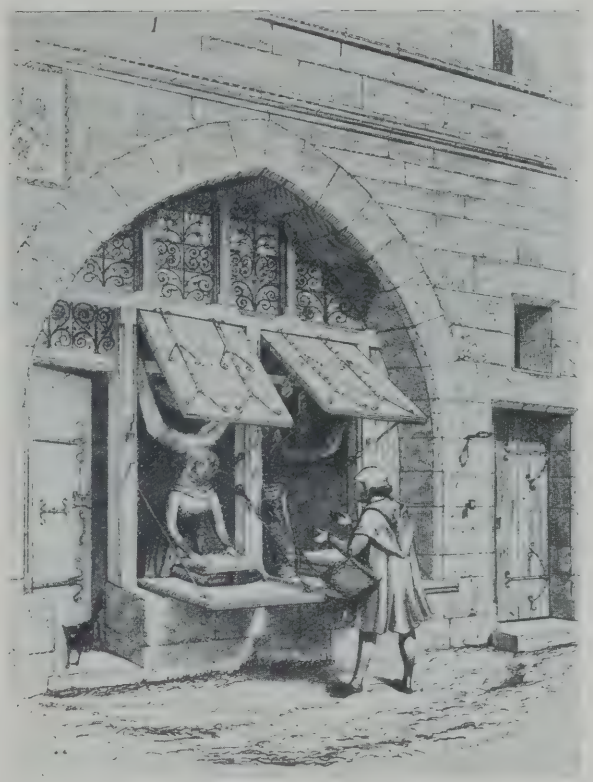
Each business was distinguished by a hanging

15TH CENTURY SHOP, BUTCHERS' ROW, SHREWSBURY

street sign, a few of which are still in common use ; two well-known examples being the barber's pole and basin, and the pawnbroker's three balls, the latter being derived from the shield of the Medici family, whose principal business was money-changing. The bush was the mark of a house of refreshment. In Brittany and other parts of France a small public house is called a " bouchon," and this sign is still common.

Trades generally had a street or district allocated to them—as, for example, leather sellers in Leather Lane, corn dealers in Cornhill—and every business had its well-known sign.

In the fifteenth century on the Continent, according to Viollet-le-Duc, trades were generally concentrated in certain districts. On Saturdays retail commerce was confined to the central markets, and the merchants, having no other means of publicity, availed themselves of the town crier's



MEDIÆVAL SHOP FRONT
From Viollet-le-Duc's *Dictionary*

services to advise possible customers of goods they had for sale.

In Paris there flourished a corporation of town criers, whose duties consisted principally of advertising the wares of the business people. The King, " St. Louis," having prohibited the sale of wine in taverns, the town criers became salesmen, and stood in the streets with a pitcher in one hand and goblet in the other, to sell the wine to customers on behalf of the tavern keepers,

In commercial cities in the Middle Ages shopkeepers endeavoured as much as possible to obstruct public circulation, and by this means to arrest the attention of the passer-by. This practice continued for a considerable time, and only disappeared when city regulations came into force. The streets with open shops and displays encroaching on the roadways had a strong resemblance to Oriental bazaars. During the hours of business all vehicular traffic was debarred from circulating in the narrow thoroughfares, crowded as they were with people and obstructed with goods of all descriptions. At meal hours business was practically suspended and many shops closed. After the curfew and on feast days and Sundays the streets were silent and almost deserted.

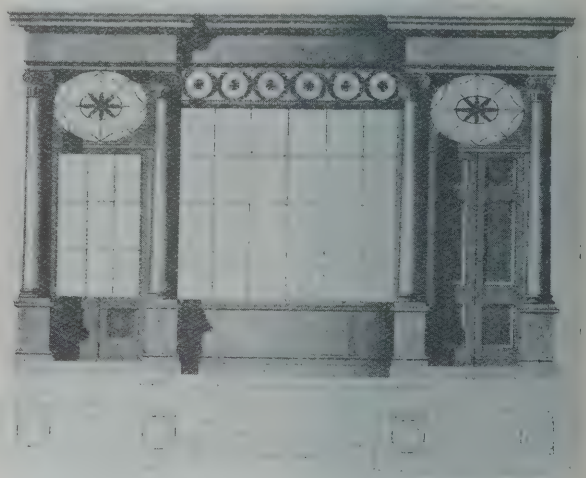
Considerable use was made of hanging signs. Many of these were simply a rebus or graphic riddle, which appealed to the curiosity and the sense of humour of possible customers, who, in the majority of cases, were illiterate, and could only appreciate pictorial symbols.

A great number of streets, even in big towns, borrowed their names from celebrated shops, and it is of interest to note that the word shop, originally spelt " shoppe," derived its origin from the French *échoppe*, which means " a stall."

The eighteenth century was a remarkable time so far as the development of shop-fronts was concerned. With the accession of George I the distributive industries of the country seemed to become suddenly imbued with a progressiveness responsible for the erection of a great number of shop-fronts of good architectural character. The introduction and gradual cheapening of glass gave rise to many possibilities in the treatment of the shop-front, and we find much charming originality and freedom of design.

Although the designs of the eighteenth century are considerably varied, yet there are certain marked characteristics common to them all. The windows, for instance, are almost invariably divided into squares by means of moulded glazing bars, these bars becoming lighter in form as time advanced. In fact, in regard to shop-fronts, a reliable guide as to date is the coarseness or delicacy of the woodwork details.

The shop-fronts of the nineteenth century are lighter and more refined than the sturdy and perhaps more architectural examples of the seventeenth and eighteenth centuries. Semi-circular fanlights decorated with radiating and curved glazing bars are commonly seen. Cornices and pilasters are very much alike in the manner of their use, the enrichments being plentifully varied. Most of the fronts of this period are well proportioned, due recognition having been given to the limited uses of material, the latter being usually wood. A classic influence upon the nature of the moulding and details is quite pronounced. Thin pilasters, fluted or panelled, and usually without capitals, are frequently introduced. The stall boards are rather high, panelled in wood, and often additionally protected by some excellent wrought iron or lead work. Bead butt



Late 18th Century Design. *Taylor's Illustrations*

or bead flush doors are greatly in favour, and sliding shutters used in preference to the flap arrangement of previous centuries.

Among many old fronts that are interesting, perhaps none are more suggestive of refinement, and of that perfection of form and detail which are all essentials of a precise architectural effectiveness, than the shop-front of Messrs. Fribourg & Treyer in the north end of the Haymarket. The successful simplicity of the doors and fanlights and the details of the frieze and cornice are delightful. It was originally designed for the business of a tobacco merchant, and is still used as such ; its date is about 1770.

Another interesting shop-front is that of Birch's in Cornhill, one of the oldest existing fronts in the

City, and built probably during the reign of George I. The ornament is of considerable merit, and the whole treatment reminds one of the picturesque London of a former age. Another simple Georgian front is that at Boxford, Suffolk, probably of mid-eighteenth century date. Its slender proportions are rather reminiscent of American Colonial work.

A motif of that period particularly admired is the shallow curved bay window. It occurs often, and always to good effect.

In the early nineteenth century we see examples illustrating a further step in the development of shop-front design—the architect adopting a treatment incorporating some classic details in the manner of Sir John Soane. The shop in

18th Century Example at Lewes, Sussex

Artillery Lane is an example showing a clever and original adaptation of classic form and details. The architectural treatment of the two doorways is distinctive.

The examples I have mentioned typify a variety of treatments ranging from extreme simplicity, hardly architectural at all except for their fine proportion and scale, to the more sophisticated design of a shop at Lewes, in which the doorway and flanking windows are separated by a little wall space, but tied together by the use of arches of approximately equal size and of the same decorative pattern, expressing a highly co-ordinated architectural design.

Following this period of intensive development it is perhaps inevitable that a decline should manifest itself. The charming little fronts no longer satisfied the needs of the shop-keeper. The glazing bars were an interruption to the display of his increasingly varied stock. In the rapidly developing industries of Germany and Belgium plate glass was being manufactured in larger sheets and greater quantities to meet a demand becoming every day more insistent, and it is the abuse of this material perhaps more than any other factor that is responsible for the rapid decline in shop f ont design subsequent to the Exhibition of 1851.

That the uninterrupted expanse of plate glass was not without its detractors even in its early days may be gathered from an article published in the *Building News* of April, 1870. Here the author remarks that a shop front must always necessarily

French 18th Century Shop Front now in Metropolitan Museum, New York

prove a very tough architectural subject, so tough indeed that a number of architects are content to leave it alone altogether. An exceedingly common practice is to throw a strong bressumer across the whole front of the building at the height of the first storey, propping it up with one or two thin iron pillars and leaving a gaping chasm below which the shopkeeper may afterwards fill up at his pleasure with any deformity his own want of taste or that of the artisan he employs may dictate.

The upper part of the house, which in ordinary streets comes least into view, will thus often give tokens of having been designed with a knowledge of the rules of architecture, while the lower portion, which is the most prominent feature and is capable

of giving completeness to the whole, will consist either of the gaping chasm already mentioned, enclosed but not concealed with plate glass, or of some pattern selected from the catalogue of a manufacturer entirely out of keeping with the elevation of the house front above.

As to plate glass, the shop owner counts the inches with as much eagerness as a farmer does his acres of land and thinks they are productive in much the same manner. His rent is regulated to a very large extent by the length of his frontage, and he naturally thinks it is to his advantage to utilise every possible inch of it for display of his goods. He therefore votes every pier which supports the upper part of the building an obstruction and a nuisance, every pillar must be as thin as possible and be put as far as it can out of sight, and the whole super structure, as far as appearances go, must hang unsupported in mid-air.

We believe the main reason why we have so few artistic shop fronts is to be found in the many contrarieties which have to be reconciled in them. The shopkeeper requires the gaping chasm and his plate glass. He is firmly convinced that the open space serves his purpose best, and when he yields a little on this point he insists on vulgar gilt lettering and as much gaudy ornament as possible to attract customers. Thus our street architecture progresses far too slowly, and where we do not find a dull uniformity we are frequently afflicted with a medley of incongruous and inartistic conceptions worthy only of a nation of shopkeepers. The precise point, in fact, wherein the salesman needs education is that good architecture forms a feature of attractiveness in itself. A shop front composed of nothing but plate glass is like a picture without a frame, and the articles displayed by the tradesman without the accessories of appropriate building decorations lose half their power of attracting customers.

The passion for enormous sheets of plate glass has done more perhaps to prevent the creation of good designs than anything else. The utmost the architect can attempt is the introduction of sash bars in brass, mahogany or some coloured material, and these he is called upon to keep as thin as possible in order that the valuable glass sheets may display their full dimensions. These instructions, while embarrassing to the designer, seem to us entirely unnecessary and useless in a multitude of businesses.

This protest of fifty years ago marks the early stages of a period of retrogression in shop front design, dating from about the time of the 1851 Exhibition, and it must be confessed that to a large extent these remarks have their full significance to-day.

The shop front, as I have endeavoured to show, has a history establishing, in the fully developed types of the eighteenth century, a tradition which still has vitality. The artistic character of these old examples, their charm, variety and fine proportions are all qualities expressing the ideal of the small shop front.

In seeking inspiration it becomes a question as to what extent will the tradition set by these Old English types answer the needs of to-day. It is not a matter of perfunctory copying. The retail shop of the present day is a subject of greater commercial variety, and it must reflect the more complex and specialised nature of the business carried on. We must have a wider variety of ideas to correspond with our many kinds of shops, and we have a further opportunity for diversifying each design in a more abundant choice of materials.

Modern shopkeepers have introduced a practice which opens a new field in design. The custom of recessing the display front so as to provide one or more openings off a corridor or vestibule leading from the pavement into the shop. This arrangement is called " an arcade," and here the buying public may circulate and view a large part of the tradesmen's stock excellently displayed before entering the building. This treatment attracts the casual passer-by, and it also economises the salesman's efforts. Architecturally it introduces a new conception : instead of a screen across the front, we have an intricate series of parts, and design changes from two into three dimensions, presenting endless possibilities.

With the growth of our centres of population and corresponding increase in property values and rentals, the arcade treatment has become of more and more importance. By adopting this type of plan and providing one or more island show cases, a 20-feet frontage may easily be made to develop a display of 60 feet or more. Although the financial returns are probably not in proportion to this increase, they are related to it to such an extent that the extra cost of installation has proved a sound investment to many merchants.

Apart from the broader considerations of general

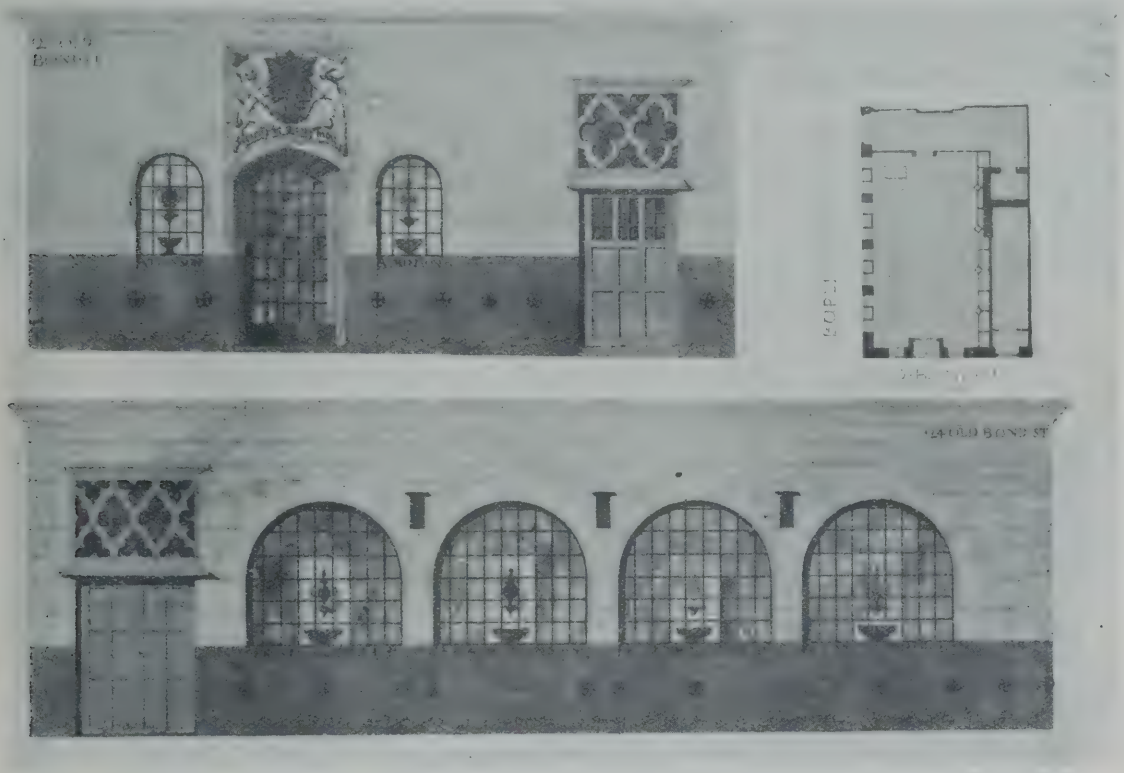
principles, the needs of the shopkeeper as affecting the design of the show window are many and various, depending on the type of business, the goods to be displayed, the locality, the custom to be invited and the reputation to be established.

It may generally be stated that large, open spaces of window create an effect of cheapness upon the passer-by, which is not always the impression which the particular business wishes to convey. The smaller window, well-proportioned and properly framed, has an air of exclusiveness very necessary to the firm that wishes to please a select clientèle. The perfume shop of Messrs. Atkinson in Bond Street provides a notable example of what the architect can do in this respect.

Liberty's new building in Argyle Place is another illustration on a larger scale. That a much greater appeal is made by not exposing everything the shop contains, but rather hinting at the contents by a number of separate and uncrowded window compositions is a psychological fact that no one will deny.

On the other hand, the shop for the sale of numerous articles of a cheap nature designed to attract the pennies of the casual pedestrian is a problem requiring a very different solution. It is here that the plate glass front has its merits.

Architecturally there are several principles which may be applied to counteract the effect of undue weight upon the plate-glass front. An excellent solution is afforded by setting back the window from the general frontage. While admitting the loss of four or five feet of valuable site, the advantages to the business are obvious; the public are tacitly invited to come within the line of the building itself; they are in a position where they have leisure to examine the display without fear of jostling by passing crowds. Messrs. Heal and Sons' store in Tottenham Court Road is one of the few places in which this plan has been adopted.



MESSRS. ATKINSON'S PERFUME SHOP, LONDON. Architect C. F. A. Voysey

MORNY'S PERFUME SHOP, LONDON. Architects, Mewés & Davis

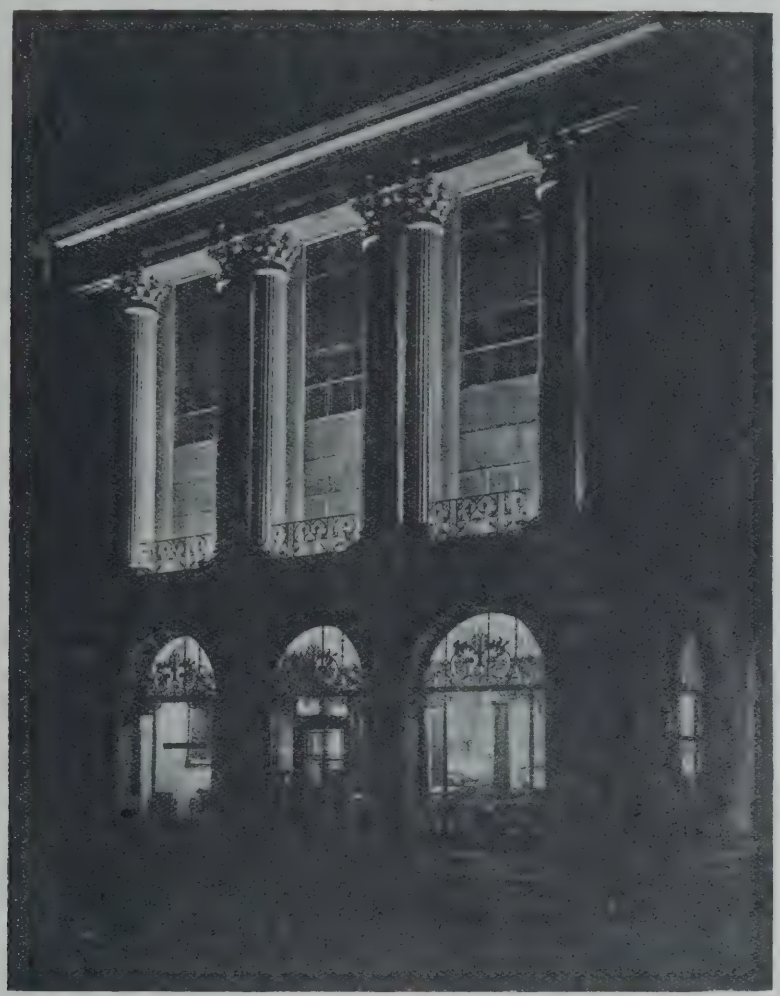
LIBERTY & CO , BOULEVARD DES CAPUCINES, PARIS

The use of the deep, flat architrave or frame as a surround enhances enormously the value of the window as a place wherein to expose fine goods. A frame has the advantage of cutting off discordant surroundings, and immediately gives the window dresser that opportunity to compose his wares which is so necessary to accentuate their value and add to their effectiveness.

The distinctive simplicity of Liberty's shop front in the Boulevards des Italiens, Paris, is another interpretation of the same principle. Large plain surfaces of veined marble relieved with a coat of arms, the company's name and a bead ornament in bronze, form an admirable frame for the rich silks displayed within. The architecture does not clash with the wares exhibited, and the flat surface treatment permits a very shallow recessing of the glass, so that the best possible light is admitted.

Where it is desired to treat a shop front as a single unit the full effectiveness will be obtained only when the design is kept small enough to be embraced by the angle of vision at one time. This applies, of course, to frontages of small dimensions.

The use of colour, not only in the exterior surround of the window but also as a background for the goods, is one that should make an increasing appeal to the designer.



THE WOLSELEY BUILDING, LONDON. Architect, W. Curtis Green, A.R.A.

With regard to artificial lighting, the general tendency is towards a softly-toned light of sufficient quantity either evenly distributed or concentrated on articles of outstanding interest. Whatever light is required outside the shop should be so treated as to be in keeping with the design. Exterior lighting is falling into disfavour, and the powerful arc lamps of twenty years ago have practically disappeared. All that is really necessary is that the name of the shopkeeper shall be sufficiently apparent, and it is now becoming the custom to place an illuminated hanging sign within the window itself.

In fact, the shop front, in addition to being a show window, is becoming one of the devices of

La Grande Parfumerie, Oxford Street
Architects, Mewés & Davis, FF.R.I.B.A.

modern salesmanship, and is itself now often used as a means of publicity.

The growing practice of illuminating the display many hours after the premises are closed constitutes an advertisement of fundamental importance. The appearance of the goods displayed is greatly enhanced by cleverly concealed and well-placed artificial illumination, and many customers are no doubt attracted by this means. Particularly is this the case in regard to shops which specialise in feminine commodities, and in this connection it may be mentioned that light and colour have the same irresistible fascination for women as the candle has for the moth.

Another modern innovation is the use of flood lighting which creates unusual contrasts of light and shade. In the interests of publicity this is a very effective method of primarily introducing the building itself to the public notice. An example of this can be seen in Mr. Curtis Green's Wolseley Building in Piccadilly and at " Selfridge's," Oxford Street.

While on the subject of publicity it is perhaps worth while to mention the somewhat objectionable scintillating signs which are at the moment enjoying a tremendous popularity, and have even been adopted for the fascia of shop fronts. Perhaps the least offensive of modern electric signs is the " Neon tube," the colour and construction of which will no doubt be modified in time. Mercury Vapour tubes are occasionally to be seen, but they give a curious effect to the complexion, and women who are aware of this generally contrive to avoid the shops which use them.

The use of effective lettering has recently been acknowledged as a commercial necessity, and as such the value of expert advice is recognised. The well-known incised gilt letters are gradually being replaced by characters of careful design and proportion, properly spaced and harmonising with the general decorative treatment.

An extreme and original example is that at the Banque Populaire in Paris, where a profuse scheme of simple lettering has been adopted.

With regard to the construction of shop fronts, it may be remarked that bent windows are no longer the fashion. Not only are they expensive, but they produce distorted reflections which are very objectionable, especially where concave glass is used.

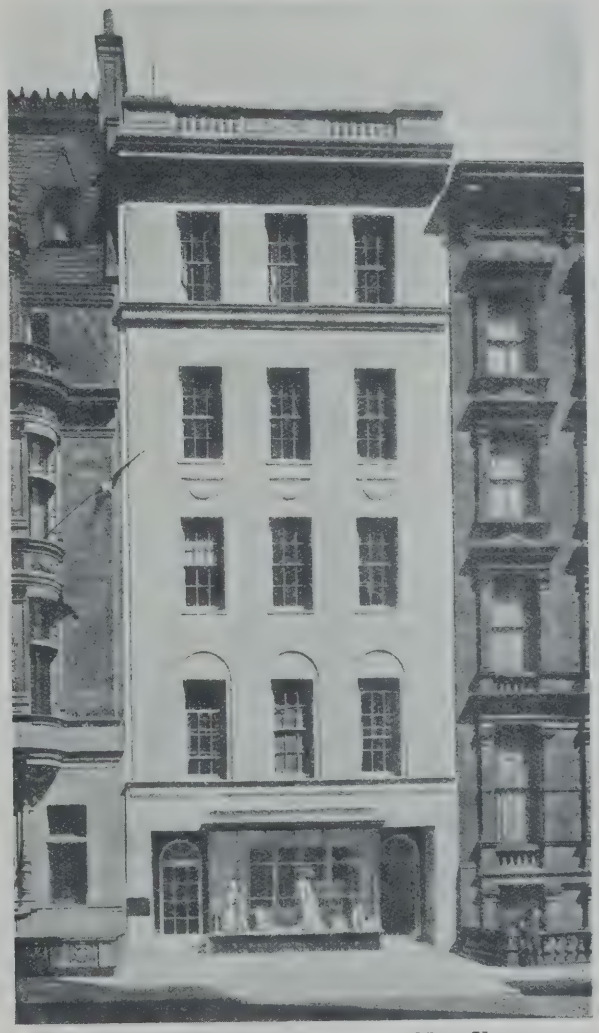
Much thought has been given to the question of avoiding condensation upon the inside of the shop window. Theoretically the problem is quite easy of solution, for it is only necessary to keep the temperature equal on both sides of the glass. To do this, however, the external air must be allowed to circulate freely, and the difficulty of admitting it evenly, at the same time excluding dust, is one that is not easily overcome. The most effective method yet evolved is to provide a film of hot air on the inside surface of the glass by means of a coil of heating pipes concealed in the window board extending across the whole front and to a depth of about 12 inches. This system has the effect of drying the air locally and is very efficient in preventing condensation.

MODERN EXAMPLE, PARIS

The level of shop floors should be made about the same as that of the pavement, thus making it easy for prospective customers to enter the merchants' places of business. This may seem to be but a detail, yet it is important, for the buying public, to quite an extent, follows the line of least resistance, so that all steps or obstacles which might deter people from entering should be omitted.

MAC FISHERIES, BROMPTON ROAD
Architect, Vincent Harris, F.R.I.B.A.

FIFTH AVENUE, NEW YORK



MESSRS. TAPPE, FIFTH AVENUE, NEW YORK

The heights of window-floors should be made to conform to the kind of goods displayed. Furniture should be shown at nearly pavement level, while rings and articles of jewellery should be presented in about the position a person would naturally wear them. In fact, it might be adopted as a maxim that merchandise, to be displayed to the best advantage, must be shown as nearly as possible in the position in which it is intended to be used.

In the limited time at my disposal it is, of course, impossible to enlarge on the few general principles which I have very briefly stated. It is gratifying to note that this interesting branch of civic architecture is receiving the consideration it deserves, and that those engaged in merchandise are alive to the importance of a problem so long neglected.

In conclusion, I will quote Mr. Marshal Field, an American authority on the subject, who says that " Goods well displayed are half sold."

Discussion

(THE PRESIDENT, MR. J. ALFRED GOTCH, IN THE CHAIR)

Captain IVOR STEWART-LIBERTY, M.C.: When I was asked to come here and move this vote of thanks, I thought I should hear a technical and professional lecture by an architect on shops and that it would be very easy for me, as a shopkeeper, to find plenty of holes in it. But, I regret to say, I am very disappointed, because I agree with every word Mr. Davis has said.

I agree that these huge buildings, resting their colossal weight on a sea of glass, are monstrous things; but I am also rather amused and interested to hear that Mr. Davis excuses—I will not say himself, but excuses architects in general—from that crime and puts it down to the shopkeeper. I am afraid I always blamed the architect. The shop window question is an extremely difficult one, and I have come to the conclusion, rightly or wrongly, that the more educated your customers are and the better taste they have, the less need there is for a shop window at all. If you go to the other extreme and cater for the uneducated population, the only answer seems to be an ocean of glass. But you architects—and I take it that all you here are architects or budding architects—must remember that a shop window is an advertisement; there is no getting away from that. And this is especially true in the case of small articles. If you put them in the window one week they will sell, and if you take them out the next week they will not sell. The buyers keep you well informed on that subject.

There was one point which Mr. Davis made that pleased me very much, and that was what he said about showing goods at the right height. If you show a ring or a necklace, it should be at body height, and if you show furniture it should be at the floor level. I object to this plague of Renaissance buildings because, although I do not feel very old, I am getting on, and I do remember when the buildings of Peter Robinson, Dickens and Jones, Robinson and Cleaver, Swears and Wells, and others had each their distinctive personality, and you knew when you were in Peter Robinson's or when you were in Swears and Wells. To-day, I never know which shop I am in! You must excuse my mentioning Liberty's, because it is the only shop I know anything about, and I do not know as much about that as I ought to. It may interest you to know that before the war we discussed for a long time whether we should build in Argyll Place. The idea then was to build in the Renaissance style, in conformity with the shop in Regent Street. The question which affected the Board was whether by building in Argyll Place we should lose trade, and this is a good opportunity for me, on behalf of the Board of Liberty and Co., to take off my hat to Debenham and Freebody. Messrs. Debenham and Freebody moved, a long time ago, to Wigmore Street, where they put up an admirable shop, with admirable windows, and they have turned a side street into a main shopping thoroughfare. It was largely owing to their example that we had the courage to go into Argyll Place. Then one of our directors said, " Let us put up a building in the style of the sixteenth century." But we got frightened again on the window question. We said, " If we put up a shop in the style of the sixteenth century, we must have it right, we must have leaded windows, otherwise, especially when it is opened, the architects and the R.I.B.A. will roar with laughter!" As a matter of fact, architects have been rather critical. For a long time the Board wondered whether they should put in leaded lights, and we compromised by putting them in, and at the same time we put £1,000 on one side, and said, " If they do not do, the windows are not very big and we will put in plate glass." I hope we shall never have to put in plate glass and that the £1,000 will be given to me as a bonus. There was a delegation of American Press people over here in the summer, and I asked one American lady how

she liked these leaded lights, and she said she thought they were "real cute," but she felt shy of looking into them, as she felt that she was looking into a private house.

There is one little point which possibly may interest you; it has nothing to do with the architectural features of shop windows, but it might help in the future. Many of us in London are rebuilding, and we have had to put up temporary shop windows. I do not know why, but those windows are very valuable. I think the secret is that you have a real frame, and the back of the window is very close to the glass, and the people have to look at the contents. Mr. Davis said something to the effect that a shop window should be a frame, and with that I agreed. He also spoke about the introduction of colour. The shopkeeper has got to be very careful about putting colour on his shop window, because he does not have the same goods in his window every day, and if you make a frame with too much colour, you are in danger of detracting from the goods displayed. I do not think it is safe to play with colour. In the background of the window you cannot play with colour either; you must go in for safety and have either a dark or a light scheme.

There is one personal thing I want to say. Mr. Davis showed us on the screen the front of our shop in Paris. I am grateful to him for mentioning that shop, because, rightly or wrongly, I love that frontage. It is a very small shop in a very important city. I should also like to say that the last two pictures you saw on the screen, of the interesting new shop at the corner of Regent Street and Conduit Street, Morny's, are of Mr. Davis's work.

And now you had better hear some technical criticisms instead of remarks from a poor "stall-keeper," as I think Mr. Davis calls me, and it is with very great pleasure I propose a hearty vote of thanks to him for his very interesting and useful paper on shop windows.

Mr. A. S. GAYE (Commissioner of Woods and Forests): It is a very great pleasure to me to be allowed to second a vote of thanks to Mr. Davis for his most interesting and most instructive paper. He has chosen for his subject, I should think, one of the most difficult problems that modern architects have to face. It is a much more difficult problem now, I am sure, than it was when competition between shopkeepers was less keen than it is to-day. Now, when an architect has to design a shop front, he must sometimes be very hard put to it to reconcile his duty to his art and his duty to his client. Because it is well known, I think, to everybody who has to deal with shop property, that every shopkeeper wants to be different from his neighbour. Perhaps that is the best sort of advertisement, or if it is not the best sort, it is the cheapest sort. The best sort of advertisement, presumably, is advertising in the Press. That, however, is enormously expensive, and is becoming more so. Therefore, the average shopkeeper does not care tuppence what his shop front looks like so long as it attracts attention. I am not sure that he is not defeating his own object; but when the pitiful shopkeepers who earn their few ha'pence in Regent Street come to appeal to me to be allowed to decorate their windows with some more distinctive advertisement in their efforts to make both ends meet, I sometimes doubt whether really they would not achieve their object by greater simplicity, and by taking the advice of their architect, rather than by following their own not very highly developed ideas of what will attract the man in the street. And it is very encouraging to hear such a paper as we have had this evening, which shows a very sympathetic understanding of the better shopkeeper's point of view; and also to hear the observations of Captain Stewart-Liberty, who shows a sympathetic understanding of the better architect's point of view. I cannot help wishing that the architects and the shopkeepers had come together at an earlier stage.

It was rather significant that in Mr. Davis's paper, and the admirable photographs with which he illustrated it, all the best, or most of the best, examples were more than a hundred years old. Then there was a long gap of some 80 years, or about that, during which practically nothing was produced which it was worth Mr. Davis's while to reproduce. During that period the shopkeepers' taste went down and down. It is true that latterly there has been an improvement, and I confess that though I came here as a sceptic, almost as a pessimist, I am enormously encouraged by the illustrations of recent work which have been shown to us this evening. I hope Mr. Davis and his brother architects, and Captain Stewart-Liberty and his brother shopkeepers, will seriously put their heads together and see that we do not descend again to the sort of thing which was produced in the latter part of the last century.

If I may venture to make a suggestion to you, Mr. President—it is very likely that it will be impossible to carry it out—it is that I should be glad if Mr. Davis could read his paper again before an audience of shopkeepers, instead of before an audience of architects. I think it would be a most helpful thing. I read, in an architectural paper the other day, a report of an address given before—I forget the name of the Association, but it may have been the Architectural Association—and in that address the President said that nothing before had ever been seen like the new Regent Street, and he trusted it would never be seen again. But, he said, some of the shop fronts were very good. I am glad to know that.

It is not for me to defend the new Regent Street, and I will not attempt to do it. After all, Regent Street, and every building in it, was designed by an architect; and if one architect says that another architect has done bad work, that architect who is said to have done bad work will probably say that his critic has also done bad work. That is the best of architecture. So long as you observe the few fundamental axioms, which are as fixed as the laws of the Medes and Persians, you can produce anything you like, and you will find somebody who will support your point of view. And though I know that the new Regent Street has many critics, it also has some friends. I am neither one nor the other—I am independent; but it will have more friends if Mr. Davis and those who have been impressed by his views this evening will design the shop fronts in those parts of the street which are not yet finished.

I have great pleasure in seconding this vote of thanks.

Mr. K. A. BRADEN [*A*]: The shopkeeper must be brought to realise that the shop window is the greatest advertising medium at his disposal, and if Mr. Davis will accept the suggestion of the speaker from the Office of Woods and Forests, that he should lecture before shopkeepers, I am sure it would have a good effect. But an easier way would be to have the lecture published in certain trade journals, which would, I think, be thrown open to him if he would send his lecture to them.

The importance of the shop front is enormous. It is at the eye-level which is of the utmost importance in most streets. More sympathy is needed between the architect and his shopkeeping client. Both hold their strong points of view. Captain Stewart-Liberty has been through the architectural mill, and has probably been won over, but there are many less sympathetic would-be clients, and those people are rather afraid of the architect. They say, "He is going to reduce my shop window space"; and in many cases I do not think the architect is sufficiently keenly alive to the varying requirements of the different trades. Many of them have been pointed out by Mr. Davis, the different heights of the window bottoms where the goods are displayed, etc. Very few architects know about these things, and I think they should make it their business to learn. Regent Street, without the Woods and Forests, would probably be a street of competitive self-assertiveness. There is always that risk, and it is only by the restraining hand of the Office of Woods and Forests that we have the small sense of uniformity that exists there now. We had to have a new Regent Street, and it might have been a much worse street than it is. The plea of the shopkeeper for his display is that, if the average member of the public does not see what he wants in the window, then instead of being a prospective purchaser, like Mr. Pim, he passes by.

Mr. PERCY J. WALDRAM [*Licentiate*]: May I draw attention to one point, which, because it is so obvious, is liable to be overlooked? Goods displayed in shop windows are put there to be seen; but sometimes they are almost invisible on account of reflections, either in daylight or by artificial light. It is merely the familiar problem of picture gallery lighting. The shop front closely resembles a glazed picture, and is subject to the same two types of distracting reflections to which we are accustomed in badly designed picture galleries. It is also amenable to the same cures.

There is first the specular reflection from the sky. Walking down Bond Street, for instance, on any fine day in summer, one passes shop after shop in which everything is invisible in the glare and glitter of reflected sky. In all cases where the sky, visible above the premises opposite to any shop window, comes within the plane of reflection of the window glass, as viewed from the eye level at the pavement, then even on dull days a bright image of that sky will appear in the glass; forcing itself upon the eyes of the onlooker, distracting attention from the goods displayed, which are by comparison poorly lit, and even reducing one's capacity to see them at all. When that sky is occupied by sun or by sunny clouds, the reflection can be not only distracting, but actually painful. The cure is obvious. A very simple geometrical projection of the street and its buildings would show the designer just how much glass he can use for display, and how much he must cut off, either by the height of his fascia, or, if necessary, by a bold transome, or a show case top. Then there are the reflected images of the spectator, of passers by, of moving vehicles, and of bright shop fronts across the road. These cannot be dodged by keeping the glass within the plane of no reflection, but they can be mitigated very materially by common sense and a due appreciation of the conditions which cause them. Smooth glass reflects only some 4 per cent. or 5 per cent. of the light incident upon it, but when the background behind that glass is dark, then bright objects can be seen by reflection from it more clearly and more insistently than darker objects behind it.

Obviously, therefore, the interiors of shop windows should be kept as light as possible. A shallow depth assists this by day, because daylight illumination falls off very rapidly indeed, even at comparatively short distances behind the glass; whereas the spectator and roadway are exposed to the light from a large area of sky which is invisible from inside the shop front.

Under artificial light, reflections from street lamps, passing vehicles, and from brightly lit shop fronts across the road are also sources of reflection which cannot be

escaped by the means which can be adopted to keep the artificial light sources of picture galleries outside the optical plane of specular reflection. But the inevitable effect of such sources of reflection in shop windows can also be mitigated by keeping the interior of the shop front light. There is at any rate no need to accentuate such reflections by filling in the back and sides of the showcase with polished hardwood panelling, forming a secondary mirror across which the reflections from lights of passing vehicles travel like a moving sign, without any of the alleged advertising value of that product of modern publicity.

A shallow depth of shop front also helps the lighting engineer, who can secure in it a higher illumination than is possible with a deep cavernous showcase.

Ample height certainly assists the daylight illumination of a shop front materially, but shallow depth helps it much more. It is difficult to light a high shop front artificially if the full height of glass be used for display. But the advertising value of display in the upper parts of high shop fronts would appear to be comparatively small and the glass there, like high pictures in a picture gallery, is particularly liable to sky reflections.

The best results would appear to be obtained by keeping the main fascia fairly high, but shutting off the upper portion of the glass by a transome and the ceiling of the showcase, leaving the upper glass clear and available to throw at least some daylight on to the shop.

The average shopkeeper—who is not always the easiest person in the world to convince—is generally averse to any mixture of daylight and artificial light inside his shop ; but the undesirability of any mixture of daylight and artificial light would appear to be more often talked about than felt. There is something which is unnatural and decidedly the reverse of attractive in any shop which is wholly lit by artificial light during the day—and daylight is certainly very desirable for the sale of fabrics and is practically essential for fruit, flowers, meat and foodstuffs generally.

I would venture to put forward a plea for closer co-operation between the architect and the lighting engineer at the earliest stages of the design of any shop front. When the lighting engineer is given the task of lighting a shop front which is already decided upon or built, he is often prevented by structural features which might easily have been varied from giving the best or even good results. He might even be given one of those wonderful fronts which were shown on the screen, with island showcases and curved arcades. My business takes me into many towns in England and I am always on the look-out for good and bad examples of lighting. But I have never yet seen one of those curved arcades into which it is not almost painful to look by night and very often by day. In them it is almost impossible, at least with modern illuminants, to avoid a direct view of several unshaded light sources against a dark background, which is the very essence of harmful glare.

We have in London one example of very pleasing shop window lighting in which I am informed the architect and the lighting engineer worked together from the first. I refer to the new fronts of the Army and Navy Stores in Victoria Street. I have no interest in this building beyond passing it daily and always admiring it. The fronts are kept straight—they are deep enough for effective display, but not too deep. The display height is kept just sufficiently low by the showcase top to avoid sky reflections, but is not too low to admit ample daylight. The goods also are generally seen against backgrounds of light wood panelling painted with a flat finish. The artificial lighting is very liberal, but any sensation of glaring contrast with a dark street is toned down by soft flood lighting.

There may be shop fronts which are more pleasing in every way as regards lighting, but I at least have not yet found them.

Mr. GILBERT H. JENKINS [*F.*] : The seconder of the motion of thanks referred to the difficulty of architects serving their art and their client, as though the two were antagonistic, but the real difficulty is to make the client realise that he only obtains the best services from his architect by allowing him to serve his art in the best way. Mr. Davis incidentally referred to the arcade front, and the last speaker also talked about the difficulty of lighting it so that the goods could be displayed in the window. There is one greater difficulty still, and that is that, in an arcade front of any depth, the lighting of the shop—if the building above is a deep building—is so diminished, that practically all day long the shop is either very gloomy, or it has to be artificially lighted ; and a shop artificially lighted in the summer does not give one the impression of welcome which is given by a shop naturally lighted. Apparently, nowadays, the tendency is to raise the height of the shop fronts, so that the scale in the street seems to be going up and up, and it is a question as to whether it would not be beneficial if the Commission of Fine Arts, or some such other body, were to lay down regulations which should make the scale of a street co-ordinated so that the competition one sees—which is destructive of the good effect, taking the street as a whole—could be avoided. We are accustomed to have the lines of frontage, the height of the whole building and other kindred matters regulated, and on the whole it is all to the good. And if rules were laid down as to the height of shop fronts, class of material and lettering to be used, and the general lines of the elevation, taking the whole block of buildings as the unit, the standard of street architecture would be raised.

There is another point, one which Mr. Davis has not referred to, and that is the question of the base-

ment. Because of the higher ground rents, nearly all London shops are tending to become three-floored. There is the shop proper on the ground floor, with additional showroom space on the basement and first floors.

The new use of the basement materially affects the design of the shop stallboard and pavement lights ; to provide openings in the stallboard for ventilating the basement is one of the most difficult problems in shop front design, and the width and pattern of the pavement lights help to make or mar the effect of the front when finished.

In his illustrations we had one shop where the front was designed for two floors, but it is to be hoped that this type of front will not be extensively adopted, because it ruins the scale of the street and also of the building of which it forms a part.

With regard to materials, there now seems to be a craze for bronze shop windows, lettering and ornament in London. No doubt it is a suitable material, because it tones down a beautiful colour, is easy to keep clean, and is very durable, its durability being measured in centuries rather than years. A Regent Street shopkeeper recently stated that it was better for the shopkeeper if the front and the fittings of the shop could be entirely changed every decade. He said that a new shop—merely because it was new—attracted a crowd of new customers, who come out of curiosity. Such a statement might apply to a business where the customers are passers-by, but in a great, old-established business it would be advantageous to have a finely designed permanent front, although, in a type of thoroughfare such as Regent Street and Oxford Street, the point of view of changing the front seems to have some merit. Such a front as Mr. Davis's admirable perfume shop in Regent Street, with its painted woodwork, would be simple to alter, as it would only be necessary to change the colour scheme ; it would be impossible to change the bronze front, on account of the expense.

Another point affecting the design of shop fronts, which has not been referred to, is the treatment of the back of the window. In many of the shops hardly sufficient care seems to have been taken over that. Mr. Davis showed a very interesting diagram where the cases were slid out to be redressed and the window to be cleaned ; but, with the number of robberies we have had lately of the " snatch " type, where jewellers' windows have been broken and trays of jewels snatched away, it might be an advantage if Triplex glass were adopted, and so the double window would be done away with : the only difficulty is that the panes can only be made of a certain size. Some architects would consider this difficulty a positive advantage, as at least one type of shop would be saved from having a huge expanse of plate glass.

Professor A. E. RICHARDSON [*F.*] : It is scarcely possible to add anything to the admirable information which Mr. Arthur Davis has given to us. I should like, however, to lay a wreath upon the antique shop fronts which have passed, particularly some of those shown by the lecturer. There was one for Bells, the chemists, which used to stand in Oxford Street. This was designed by George Maddox, who specialised in shops a century since. It was Maddox who taught Decimus Burton and Cockerell to draw. He built some of the shops in Lamb's Conduit Street and the chemist's shop in Byng Place. The shop fronts at Woburn in Bedfordshire, which for originality are unique, were also designed by Maddox. We all look on these survivals of past custom and enjoy them, but while we delight in all that the past can show we have learnt to project our thoughts into the future.

To-day there is a suggestion that trading interests should be zoned. This theory is a very old one, in fact it existed from mediæval times to the late eighteenth century. I should like to carry the thoughts of the meeting to the rebuilding of New Oxford Street, a property of the Crown, which will shortly have to be reconstructed. Here is an opportunity to project an imaginative design. The drapery interest is an important one, and in the case of New Oxford Street a real opportunity exists for a daring proposal.

The idea is to design a number of buildings on the block principle, having three tiers of shops. There would be shops on the level of the pavement, shops again at the first floor level and shops within a loggia at the top, which could be enclosed during bad weather. May I remind you that the Uffizi Gallery at Florence, particularly the top storey, suggested the idea. The separate blocks would be connected across the streets by means of flying bridges of light decorative character. There would result a triplication of the footways with moving pavements and all sorts of modern devices. The ordinary pedestrian would be able to walk in comfort for half a mile under cover and would soon get into the habit of taking the lift to the higher level.

This idea would only apply to certain streets. The plans have been fully worked out by some gentlemen in this room and have aroused considerable interest among leaders of commerce. We have in Chester the admirable examples of the Rows. Why should there not be a modern application of the idea on a bigger scale ? There is need to-day for comprehensive design in the treatment of street frontages—some return to that admirable quality of monotony and uniformity which need not consist of the repetition of orders and pilasters. Modern architecture, in so far as civics is concerned, is bound to respond to the development of imaginative ideas.

Mr. H. V. LANCHESTER [*F.*] : I would like to add my tribute to the exceedingly interesting paper which Mr. Davis has given us. I regard this as a most important subject, and I felt so twelve years ago, when I had the opportunity of reading a paper on the same subject as Mr. Davis's, and an eminent relative of Captain Stewart-Liberty's was in the chair.

There are one or two points in Mr. Davis's paper which I would like to take up. One was about Chester. I have heard another theory about Chester which does not agree with his as to the inception of the Rows. This was that the Roman city fell into ruin, and the debris filled a height of 7 feet. They kept the roads clear because they were main thoroughfares. And when the people came to re-establish the town they built their little houses on top of the debris ; they were not very heavy, consisting mostly of wood. Then things got busier, and they built sheds at the edge of the road, and in mediæval times they brought the houses forward over the stalls on the side of the road, and established these levels owing to the fact that the height of the ground floor was fixed when they began to rebuild 7 or 8 feet above the original road level. That is the solution which has been given me for the growth of the Chester Rows.

There is one little aspect of the case which Mr. Davis has not yet touched on, but it came to my mind forcibly when looking at the splendid series of illustrations he gave us. It is the varied solution of the difficulty of an open front with solid building over it. There was the frank negation of the demand to have the building supported. We are able to carry a building on very slight supports, and I remember a story in that connection which an eminent member of this Institute told me. He said he wanted to get some supports which would suggest carrying the façade, but they were reduced and reduced until, at last, he got nothing left, and, referring to the client, he said, " I hope you will have those shirt-fronts nicely starched." " Why ? " " Because they are all that you have left me to carry the front of my building on."

It seems to me that there are four ways in which you can attempt a solution of that problem. There is the plain open front with the effect of a very substantial beam treatment over ; and that covers the shop front of the recessed arcade, because this is practically the equivalent of the plate-glass front. I have noticed it rather cleverly solved in one or two cases in America, where instead of the ordinary beam treatment the whole of the first floor is given the character of a beam with the voids latticed, which suggests strength, and thus the whole of the first floor is carrying the building over. Another is that which bases itself more on the mediæval treatment, where the shop front should come forward from the plane of the main building, so that you can imagine the back of the shallow shop front is carrying the building over, and it continues downward, apparently behind the front. There is the third solution of the arcade, treating the shop with continuous arches like an old market place. And there is another one, which has been widely adopted on the Continent, where the whole front of the building is the shop front. It might have been very appropriate in Regent Street. I think there is much too much Portland stone in Regent Street. Many of the premises could have been appropriately treated in bronze with strengthening piers from top to bottom. In several of the Continental capitals there are some beautiful fronts which are treated in four or five storeys without any added substance from the ground floor upwards. You need not have these entirely glazed because that means a difficulty about warming, etc.

I feel there is much hope that in the future we shall get a treatment of the whole front where the building is entirely a shop, rather than further attempts to add heavy chunks, as in Selfridge's columns, to what is naturally a light structure suitable for business purposes.

Mr. E. STANLEY HALL [*F.*] : Now that Captain Stewart-Liberty has gone, I think I may say I know who ought to have that thousand pounds ! I cannot speak too highly of my clients in my case, because they have been the exception to all the rules of shopkeepers ; they have been most anxious to help in every way.

There is one thing I should like to make a plea for. Mr. Davis mentioned the invariable use of hanging signs in the old days. In nearly all the cases in which they have been used in London they have been most decorative, and, for a stranger, most helpful. There are one or two in the City still, which are very attractive—there is the Grasshopper, at Martin's Bank, for instance. Hanging signs might still lend much interest and colour to streets.

And there is the question of artificial lighting which Mr. Percy Waldram touched on. The trouble there is, as he said, exactly as in picture galleries—the high light on the spectator and the shaded light on the object looked at. The secret is to keep the background of the shop front light rather than dark. So many people are anxious to use walnut and mahogany. But where there are light shop backs they get over the real difficulty in summer caused by a white street and a more or less white series of buildings opposite. You cannot compete by artificial light with strong sunlight in summer.

Another point is that all these shops lighted at night-time are on the clock-work principle ; before the people go home, they set the mechanism to put out the lights at a certain hour.

I support heartily the vote of thanks for the paper and the charming illustrations.

Mr. JOHN MURRAY [*F.*]: I do not know that I can add anything useful to what has been said, but I would like to support the vote of thanks to Mr. Davis for his very interesting and instructive paper.

There are two or three points I would like to give my experience upon from a practical and professional point of view, which, after all, is the most interesting to us architects who have to design these shop fronts. I have endeavoured to obtain from tradesmen of considerable distinction some estimate of what they would lose if they granted to an architect a few inches more of brick pier or stone pier to support their establishments, and I have never been able to get their estimates. I think this is due to the fact that the decimal point would be so small they would not have time to tell me. I think the question of a large sheet of plate glass is a matter of pounds, shillings and pence in the estimation of the tradesman, and I do not think there is much in it. If we obtained a little more support for our buildings I do not think the tradesman would suffer in his dividends.

There is a point about the designing of the modern shop which I do not think has been mentioned, and it is likely to be the most satisfactory one in the future. It is the form where the shop blind practically rules the design. It is becoming customary to fix the shop blind about three feet below the top of the shop front. That allows plenty of room for the display of goods and leaves the shop front above the blind clear for lighting the back of the shop and for ventilating. It can be framed up and small squares of glass and open ventilators can be fixed. That method dominates the whole design of the shop front, and I think there is a large future for it.

The question of colour in the shop surrounds has been mentioned, and it is very important. I do not agree with the use of dark woods and similar materials. I think a lighter shop front inside displays the colours of the goods much better.

The question of metal frames is one of the most important points now being developed, and the bronze bars are more satisfactory for the display of goods as well as being more economical for the shopkeeper to keep clean and polished.

Some of our tradesmen prefer to fix shop fronts of some old type—a type which is sometimes very inartistic. But they will have these because they look upon them as trade-marks, and they attach a certain amount of goodwill to them. That may be so, but I think they would be better advised to have a new modern front which is artistic, and even architectural. Very often in that respect the tradesman and the architect take the line of least resistance, and allow a shop front to be imported from some past age, although it is anything but artistic.

I think the best method of designing the ordinary small shop of say 20 feet frontage in order to meet the necessities of the building is to frame it up like the frame of a picture. It is impossible in many cases to design shop fronts in harmony with the design of the building. Buildings are designed and shop fronts are an afterthought. The shopfitter and the architect have then to fix the shop front to the building already designed. I have never seen two shop fronts belonging to two different tradesmen which are exactly alike. Every tradesman wants a different kind of shop for the display in his window of similar goods. One will want a sheet of glass 20 ft. wide whereas the other will want a similar area cut into three or four sections in order to display three or four kinds of goods, and it is impossible then to get the vertical lines of the shop front in harmony with the architecture of the upper part of the building. The result is that the architect must be allowed a fairly free hand in the designing of his shop front, and there are only two ways of doing it—either to have a horizontal lintel of good depth over the shop or to frame it up like a picture frame, the frame being of ample dimensions.

Mr. A. H. MOBERLY [*F.*]: May I put in a plea for the abused shopkeeper—abused because he is anxious to have plate glass. We have been told that he is not considering the building above, and that to gain a few extra shillings a year he is ruining the building by refusing to give it sufficient support. Professor Richardson and another speaker have suggested by their remarks that it is not necessarily the shopkeeper who is to blame. It is really we architects who are to blame for the rigidity of our ideas. Any new departure in architecture must be begun slowly, and until a tradition has been built up it is not likely to be very successful. Although it has been suggested—quite correctly—that there are certain types of goods which can be displayed better if there are only small places in which they are shown, it is clear that many shopkeepers feel that their trade depends on a very large amount of plate glass. In most types of building, if a client requires certain practical things we consider it our job as architects to solve the problem and give the client what he requires, at the same time producing a satisfactory building. But we are so far obsessed by the idea that a building should be a very solid-looking structure that even when the main object of a building is the shop at the bottom, for which the shopkeeper wants the maximum possible area of glass, we tell him that he is ruining our work, and that we as artists wish to make a building which is fine architecturally, regardless of the purpose for which it was designed. It is a very difficult problem, and I do not think anyone has yet solved it, or that it will be solved in a single generation. But I think the direction in which we should look for a solution—as has been already hinted at

by another speaker—is that ultimately streets which exist primarily for their shops should not consist of Portland stone, but should be of a light character in keeping with the bottom storey, rather than that we should demand that the shopkeeper should make his bottom storey conform with our pre-conceived design for the top of the building.

The vote was carried by acclamation.

Mr. DAVIS, in reply, said: As it is late I will not attempt to answer all the points which have been mentioned in the very interesting discussion we have had. It was, I think, Mr. Gaye who said I had selected a difficult problem to deal with, but I did not choose it—it was selected for me, and I realise that there is much to be said which I have omitted. The subject comprises a very wide field, and it is impossible, in the time at one's disposal, to cover the whole ground.

I have had to omit reference to departmental stores, but a very interesting paper on that subject has been read fairly recently before the Institute by Mr. H. Austen Hall,* who dealt with that problem very thoroughly.

With regard to Captain Ivor Stewart-Liberty's remarks, I think we should be very grateful to him for having come here and given us the views of a large store-owner and merchant on this question. He has shown what a courageous business man can do in the way of revolution. I think the premises he has erected are admired by us all, and I sincerely hope he will get the bonus, and divides it, "50 50," with Mr. Hall.

Reference has been made to my omission of the treatment of the back of the shop window; but the title of my paper was "Shop Fronts and Their Treatment," and, not knowing much about the backs, I thought it permissible to omit reference to them.

I think we have had a very interesting debate to-night, and, of course, the main purpose of my paper was to provoke discussion. I am very grateful to you all for the patience you have shown in listening to my paper, and I thank you for the kind way in which you have received it.

The Troubles of the Building Trade

BY MAURICE E. WEBB, D.S.O. [*F.*].

"FOOLS step in where angels fear to tread," but at the request of the Editor I am venturing, with some hesitation, to tread on the slippery slope which leads to controversy and perhaps even to disillusionment. I do it only on the understanding that these are personal opinions, and opinions that can in no way commit our JOURNAL, our Institute, or our members to any views contained in this brief article.

If the subject is ventilated, discussed, and freed from the smoke-screen of secret intrigues and diplomacy, some good may result. That is the one hope. There is another proverb which is applicable to this case, and that is: "Outsiders see most of the game." In all disputes and troubles between masters and men in the building trade, architects are unfortunately outsiders, but they do hear one way and another in spite of this disability some of the inside difficulties of both sides.

Now I claim, at the expense of being called egotistical, to have had some experience of another side, as well as the purely professional one; and in writing these notes, I do so in the sure knowledge that hundreds of the younger generation of architects have shared the same curious experience. On the outbreak of war we left our professional pursuit of architecture, where we had been accustomed to a very happy condition of affairs. Builders signed contracts and carried them out according to plan, and with little difficulty in respect to their labour. We got to know the men working on the job; we knew their foremen and the senior hands as well; there was no trouble, no difficulty. An occasional strike—a slight whisper in the breeze; spells of unemployment; a firm hand by the masters; and back to work by the men—a little sullen, but back to work. We didn't think enough perhaps, or we thought these little grumbles were inevitable in every walk of life.

Then came the war. Hundreds of us joined the Forces in every kind of capacity, and many of us served as privates, N.C.O.'s and officers, and during that service heard many things which we should never have heard otherwise. In the ranks, in a squad, in a barrack dormitory with a bricklayer or a plumber among its occupants, opportunities arose for learning something of the conditions under which British workmen labour that probably would have been impossible without precisely such opportunities. In an officers' mess, when a master builder happens to be a second lieutenant, secrets are divulged which throw a flood of light upon the conditions which govern his outlook upon the building trade. The result of these experiences has altered our outlook completely.

In the old days we were accustomed to the real master builder—the man who knew his trade, worked at it, loved it, and was satisfied with a reasonable profit. We were also accustomed to the real workman, who knew his job, loved it, and laid as many bricks

* See R.I.B.A. JOURNAL, 10 April, 1920.

as he could lay properly in a day; or floated, as the case may be, as many yards of plaster ceiling as he could float properly in the time at his disposal. Both sides were satisfied that each was an integral part of the business, and each depended on the other. The war unfortunately gave an impetus—it was inevitable, everyone will admit—to the replacement of the builder by the contractor on a large—perhaps too large—scale, a movement which had begun before the war.

There is a great difference between these two. The builder's object is to make a reasonable living for himself and his descendants by building generally good buildings. The building contractor too often makes money for his own and his descendants' benefit largely by exploiting—or shall I say financing?—the building trade.

The men, before the war, were quick to perceive the difference; and after the war they used it to set up the now so well-known ca'-canny attitude in self-defence. Each side thinks that the other is trying to get the better of it, and a trade which is centuries old is riven through and through with dissension and strife.

If ever there was a trade in which there should be no taking sides as between masters and men, it is surely the building trade; it does not depend, and never will, except to a comparative extent, in England, on machinery or modern inventions which the ignorant are apt to think will cut out labour and therefore get us out of all difficulties. It depends, and always will, on the goodwill of the man who lays the bricks, pours out the concrete, fixes the windows and doors, lays the floors, or makes the joints in the leaden pipes. Goodwill is the essence of the whole business and must, as far as I can see, always be so.

To revert to the war and its lessons: those of us who got to know the men who work with their hands —whether in the building trade or any other trade— know that they are capable of any heights when properly led. When we come back to civil life and see five years of continual strikes and troubles in the trade with which we are intimately concerned, we can only think that they are not being properly led now. There is and must be something wrong somewhere. Men of this spirit, who have proved their love of country, do not strike and fight and sulk with their employers at home for nothing. What is wrong? That is the question.

In the building trade the whole trouble now seems to be a wrong spirit between master and men, fostered on one side by the ca'-canny methods of the men and stupid restrictive rules of the trade unions, and on the other by the brutal system of employment by the hour which the employers insist on adopting—entirely alien to that of the old master builders.

If it rains, if it snows, if it freezes, the outside men are sent away from their work without pay for the rest of the day at the behest of a foreman's whistle. We have seen this happen over and over again, as we have all since the war seen men idling at their work. If the employers will sit down with the men to evolve a solution of this difficulty, and devise some system whereby a craftsman can secure a reasonable continuity of employment, I believe the men will, in spite of the trade unions, give up their ca'-canny methods and will even encourage other men to join their trade. That they would not do so immediately after the war, when the ex-Service scheme was attempted, was because of a deeply felt grievance of the unfairness of their position, and very properly they did not wish to encourage anyone to join a trade which has to work under such unfair conditions.

If architects, as outsiders who know something of this tragic game and see most of it, could help, I am sure there would be no dearth of volunteers willing to assist in arriving at some solution of the troubles which beset the building trade. But masters and men are now full of their own difficulties, and so ridden with unions and rules on both sides that it seems there is no chance of outside help being invoked to try to find a way to peace.

Was the war in vain?

We as architects—and, indeed, members of the general public—can, it seems, do no more than express a pious hope that the difficulties will be overcome and wish to the building trade a speedy solution of its problems. At this Christmastide we do, I know, wish "On earth peace, goodwill towards men."

22 *December* 1924

The late Paul Waterhouse

Past President R.I.B.A.

BY SIR ASTON WEBB, G.C.V.O., R.A.

"PAUL WATERHOUSE." I am asked to write a few memorial lines of our late President as I knew him, though his architectural life and character have been already dealt with by others from many points of view far better than I can hope to do.

He was almost universally known as "Paul," a sure sign, I think, of confidence and affection.

I happened to be Hon. Secretary of the R.I.B.A. when Paul's father, Alfred Waterhouse, was President, and so got to know both father and son pretty well, and I feel happy to have lived to see both of them as Presidents of the Institute. In many ways they were alike, in many very different, but both had that essential quality of a great President, the gift of making themselves trusted in a rare degree, combined with an honest sense of independence and fair-mindedness.

The picture of each by two very distinguished painters, William Orchardson and Sir William Orpen, hang in our Institute rooms and will call back, it is hoped, to the coming generation ideals of professional honesty and conduct as well as the happy domestic graces of life.

Paul Waterhouse was probably comparatively little known and appreciated by the profession until he became President, probably on account of his modesty and the busy life he was leading, but when Sir John Simpson retired and it became necessary to find a successor capable of carrying on in those difficult times, all those who knew "Paul" well looked to him to fill the gap; but we found him from one reason and another somewhat reluctant to face the work—possibly he knew of the trouble which was to take him from us at last, but of this I know nothing.

I was asked to write and beg him seriously to consider standing as President; possibly others were asked to do the same. He replied in one of his charming letters (he was an ideal letter writer), saying in effect that he did not want to stand, but that if I told him I thought it was a duty he owed to the profession he would try and do it, and as we all know he finally accepted and quickly showed himself to be the right man in the right place.

As an old Etonian and Balliol man he brought many distinguished men to hear his addresses, full of wit and wisdom as they were, and I well remember in his first address, when he referred to some improvements that were proposed in what was then by courtesy called the meeting room, Lord Sumner, in his remarks, observed that the room certainly did remind him more of a coroner's court than anything else, a remark which I always thought had something to do with its speedy removal.

As President, both in the Council room and in general meeting, his fairness, his clear cut common sense, his humour, and, if I may say so, his human kindness, carried everything before them and obstacles and difficulties that at one time seemed almost insupportable were found gradually to steal away.

He proved himself a great ambassador to the Allied Societies; he attended their banquets and spoke at them, so that the members of these Societies said openly: "Now we have a man at the head of the Institute who understands our needs, realises our difficulties, and has the desire and energy to remedy them," with the result that he has certainly left the profession in a stronger and more united position than it has ever been before.

The amalgamation of the Society of Architects with the Institute was another matter which much interested him and which must undoubtedly strengthen both bodies and the profession, though we must all regret he has not been spared to see the completion of this proposal, which it is hoped may be achieved in the beginning of 1925.

During his Presidency the relations with the R.A. were always most friendly and he at once became favourite speaker at the Royal Academy Club dinners, exactly suited as his speeches always were to the audience and the occasion.

He was chairman of the Committee of the London Society dealing with the South side of the Thames, a trustee of the Soane Museum, a member of the Athenæum and many other Societies and Clubs, from all of which he will be sorely missed.

The last time I saw him, a few days before his death, I met him in the hall of the Athenæum and he told me he had "been troubled with his heart, but not seriously, and by keeping a little quiet I shall be all right again"; but it was not to be.

In these few lines I have dealt with his life as President of the Institute almost wholly, but he was a many-sided man, both in and out of his profession, and a full description of him has yet to be written—perhaps I may have said something to show those who knew him not that may enable them to understand the great services he rendered in one department of his life.

He will be remembered as one who shirked no responsibility, upheld the highest traditions of his profession, and has left us all grateful for the fine example of "Paul Waterhouse."

BY J. ALFRED GOTCH (PRESIDENT).

IN Paul Waterhouse the architectural profession has lost one of its chief ornaments, and the public one of their most trusty guides in questions connected with architecture.

Waterhouse was a man of culture and a scholar, as well as a very busy and skilful architect. He was, moreover, distinguished as the master of an attractive literary style, and the same attractiveness marked his public utterances. We need go no farther back than to the occasion of his tribute to Wren, which all his hearers agreed was a masterpiece of restrained and unexaggerated eulogy. The solid common sense of his speeches was frequently illumined by flashes of wit or the lambent flame of humour. A man possessing this gift of charming speech, especially when he calls it in aid of sound doctrine, must always be a force to reckon with, and his gift stood Waterhouse in good stead during his tenure of the President's chair. No one who sat on the Council during his second year of office, when the course of deliberation did not always run smooth, could help admiring his tact, his courtesy, and his knack of solving a situation by a jesting remark.

The first time I saw him was many years ago, on the occasion of a distribution of prizes at the Institute. I recall him as he walked up to receive his prize, boyish yet alert and debonair, meeting, with a smile of modest deprecation, the loud applause which was in part a tribute to him and in part to his eminent father. From that day on he continued to take advantage of his excellent start in the architectural race, and he passed the winning-post, as it were, when he succeeded to the Presidency of the Institute : an office, by the way, entailing much more arduous work than had fallen upon his father when occupying the same chair. That he should have lived but little more than twelve months after vacating that chair is indeed a tragedy, for he had the prospect before him of many years of useful work and honoured recognition.

The sudden manner of his going may be counted to him as a gain, despite a phrase in the Litany to the contrary ; but to all others it was a grievous shock. We architects cannot view without a pang of keen regret the passing of one who, through his work, through his wide culture and his personal charm, shed lustre on our calling ; and not often is it so forcibly borne in upon us that

" Death loves a shining mark, a signal blow."

BY ARTHUR KEEN (HON. SECRETARY).

I GLADLY accede to the request that I should write a few words about Paul Waterhouse. The loss sustained by the Institute is severe, and to those who worked in close association with him the feeling of sorrow is very deep ; but so strong and vivid was his personality that it seems difficult at present to realise that he is actually gone. Friendship with him was a great privilege and to be in his company was an active pleasure ; one realised not alone the power and activity of his mind and the breadth of his culture but also the kindly, tolerant nature, the interest he found in all kinds of people, his sympathy and his insight and the quick, accurate judgment that distinguished him : perhaps more than all one enjoyed the direct, adequate way in which he expressed everything he said. I have never known anyone to equal him in clear, accurate statement : picturesque and telling as his language was it was singularly free from exaggeration. I once heard him remark to a student that nothing was so little emphatic as over-emphasis, and one constantly felt that he understood the value of his own axiom. Another thing that I heard him say was that he was warned, as a boy, against reliance on adjectives, and that he had been discarding adjectives ever since !

But clear, adequate statement was merely the basis upon which his power as a speaker or writer rested : art exists in relation to language as much as in relation to structure, and Waterhouse was a great artist in words. To efficient expression he added the beauty and interest that belong to well chosen words arranged in fine, well balanced sentences. His metaphors and similes reflected in most vivid fashion the images in his mind and they seemed capable of constant extension and re-application : his illustrations adapted themselves to the development of his subject in a way that was a delight to the listener : he had wit and humour, he had imagination, grasp and resource : and although one would not call him an especially eloquent speaker there were times when his utterances were most moving and impressive.

He did not seek the honour of being President : for a long while he resisted it ; but having accepted the position—and for a great part of the time it was a position of extraordinary difficulty—he won the esteem of everybody by the tact and efficiency with which he conducted the affairs of the Institute ; by the reasonable, courteous way in which he met opposition ; by his fairness and by the dignity with which he represented us on all occasions. He had tremendous belief in the potentialities of the Institute, in its authority and prestige and in the importance of extending and strengthening its influence. He did, by his own effort, extend that influence very materially by visiting the provincial societies, winning their active support and making personal acquaintance with their members.

He realised the rapid change that is taking place in provincial life as the result of the increase in business and wealth, the growth of population, the extension of facilities for communication and, in particular, as the result of education ; and he applied himself as his predecessor Sir John Simpson had done, very seriously, to making the alliance between the provincial societies and the parent body stronger and more effective. He took great interest, especially, in the schools of architecture in the provincial cities and in addition to his duties as President he actually discharged those of External Examiner in the schools at Aberdeen, Cardiff, Edinburgh and Glasgow. These are duties that demand close attention to a great deal of detail as well as call for experience and sound judgment ; but it was characteristic of him that with all his penetration and insight he studied details with most patient care.

He might have excelled in any profession ; certainly he might well have made a very great lawyer ; but he devoted himself heart and soul to the art and profession of architecture and gave us freely of his best. Even if he had lived longer we could not have repaid his generous and unselfish efforts, but I hope that he realised in some measure the affection and respect that they won for him from all his colleagues and perhaps not least from many of those who differed from him in important matters.

Mr. Waterhouse was born at Manchester in 1861, the son of Alfred Waterhouse, R.A., and Elizabeth, daughter of John Hodgkin and sister of Thomas Hodgkin, historian. He was educated at Eton, where he reached the sixth form, and at Balliol College, Oxford, where he was captain (and cox) of the College eight, and obtained an honours degree (second class in classics).

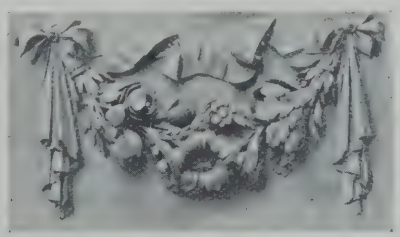
Mr. Waterhouse served his pupilage with his father, with whom he was for ten years partner. He completed his father's work at Liverpool University, at Girton College, at University College Hospital, at the Royal Infirmary, Liverpool, at St. Mary's Hospital, Manchester, at the Prudential Office Holborn, and many other places. Of his independent works since the period of partnership the principal are the University of Manchester (botany block, extension of chemical and library departments, and museum, now in progress) ; Leeds University (metallurgical, electric, arts, botany, agriculture, now in progress), and other blocks ; Oxford University organic chemistry laboratory ; Prudential offices at Stockton, Stockport, Leicester, Aberdeen, Dunfermline, Grimsby, Darlington, Middlesbrough ; additions for the National Provincial Bank, Bishopsgate ; Refuge Assurance Company extensions at Manchester ; new premises for Lloyds and National Provincial Foreign Bank at Paris, Brussels, and Antwerp, now in progress ; St. Francis Church, Hammersfield ; Convent of the Incarnation, Oxford ; various domestic cottage and church works at St. Andrews, Fife ; the Tabernacle of the Blessed Sacrament of St. Mary Magdalene's, Osnaburgh Street ; the medical school of the University College Hospital, Gower Street ; the Royal National Pension Fund for Nurses, Buckingham Street, Strand ; the London Salvage Corps ; the Atlas office, Birmingham. He was appointed architect, in conjunction with Mr. George Hornblower, of the new buildings of University College Hospital. He has written extensively on architectural subjects in periodicals, has frequently lectured on the same topics and on London problems. For Macmillan's guide-book of Italy he contributed a summary of the architectural history of Italy, and has written many lives in the *Dictionary of National Biography*. He was a life trustee of Sir John Soane's Museum.

He was elected an Associate of the R.I.B.A. in 1889, having won an additional prize in the old Associateship examination, being second to the Ashpitel Prizeman of his year. In 1886 he was awarded the Institute Silver Medal and twenty-five guineas for an essay on " Pediments and Gables."

He was a Vice-President of the R.I.B.A. from 1915 to 1919 and was President 1921–1922. He has also been Vice-President of the Architectural Association. He was for many years a performing member (tenor) of the Bach Choir and of the Magpie Madrigal Society.

He married in 1887 Lucy Grace, daughter of Sir Reginald Palgrave, K.C.B., and has one son, Mr. Michael Waterhouse, A.R.I.B.A., who has been since 1919 in active partnership with his father, and two daughters, the elder, Rachel, being the wife of Captain James F. Younger of Arnnbrae, Alloa.

Mr. Waterhouse, who had been taking a rest for about three months owing to slight heart trouble, died quite suddenly at his country home, where he had lived since the death of his mother in 1918.



HEYSHAM (NEAR LANCASTER): THE HOGBACK (ABOUT A.D. 1000)

Pre-Norman Free Standing Stone Crosses

BY JOHN HALL [*F.*].

ARCHÆOLOGISTS are satisfied that before about 650 A.D. there was no distinctly Christian art existing in Great Britain. What monuments we do possess, however, of the pre-Augustine Church consist of rude pillar-stones with incised crosses of early form, with debased Roman lettering, and, in Celtic areas, with Celtic inscriptions and Ogams in addition. Christian monuments of this early type have been found on two sites, at Whithorn and Kirkmadrine, both in Galloway. Whithorn, we are informed by Bede, is the traditional site on which St. Ninian built a stone church (400-430), afterwards known as Candida Casa. Some of these monuments show the Chrismon monogram described within a circle, with Romano-Gallic inscriptions below; they had been set up over graves of the departed, while one stone at Whithorn had been used originally as a boundary mark. The date of these markings and inscriptions is somewhat uncertain, but Professor G. Baldwin Brown, in *The Arts in Early England*, Vol. V., wherein these stones are illustrated, ascribes them to the provisional date of the fifth to the sixth century. Thus it may be said that these early Romano-Gallic stones form the prototype of all Anglian and Celtic free-standing stone crosses.

In a subsidiary way we have in County Durham sepulchral monuments of an interesting nature known as the Hartlepool "Pillow-Stones." These stones average in size from 5 to 8 inches square by 1½ inches thick. They are ornamented with an incised cross, a circle surrounding the intersection of the limbs, while the latter terminate each in a semicircle. The inscriptions which occur are in Teutonic runes as well as in Latin, and are therefore ascribed provisionally, by Professor G. Baldwin Brown, to the seventh and eighth centuries. Grave-slabs similar to these exists at Clonmacnois, Monasterboice and elsewhere in Ireland, although not "pillow-stones," the earliest of which is dated the eighth century. At Lindisfarne there are also three upright gravestones with incised crosses and inscriptions similar to those of Hartlepool, with the exception that the outline of the slabs at their heads is curved. Of the same order of early grave-slabs we have, at St. Peter's Church, Monkwearmouth, an interesting example in the well-known Herebercht memorial. Although the cross shows a rectangular centre and terminals, it is like one of the lost Hartlepool stones; it is similar to some at Clonmacnois, and is considered to be of the seventh or the early eighth century.

It will accordingly be seen that the Hartlepool "pillow-stones" are earlier in date than similar stones in Ireland. Hence the question as to whether the cross with central circle and semicircular or circular terminals originated in Ireland or was imported from England. Professor G. Baldwin Brown suggests that in these circumstances that the claim of Ireland to priority should be abandoned, and a reconsideration of the current theories as to the relation of Irish and British artistic forms should be enquired into by archæologists.

With regard to the Celtic MSS., none of these can be dated earlier than the middle of the seventh century. The illuminated Celtic MSS. are not now thought to be quite so early as some antiquaries of the last century believed. The Lindisfarne book, for instance, is considered by Professor G. Baldwin Brown to date from the beginning of the eighth century, and we may take it as the starting point of all Hiberno-Saxon art. This book, it should be noted, contains no foliage ornament on its pages. Another of these famous MSS. is the Book of Kells, now in Trinity College, Dublin. It is somewhat later in date and more elaborate in execution than the Lindisfarne Book. It contains foliage ornament in addition to portraits of the Evangelists, etc. Leaf and plant decoration, it should be noted, is entirely foreign to the spirit of purely Celtic art, and, wherever found, is generally to be traced to Northumbrian influence.

To illustrate this part of our subject by a more concrete example, reference must be made to the Ormside Cup, now in York Museum. The silver gilt repoussé which ornaments its outside cover depicts vinelike foliage in which birds, quadrupeds, and fantastic creatures disport themselves. There is no Celtic influence shown in the ornament ; it is considered to be of Anglian origin, and dated about the eighth century.

In the middle of the seventh century many monasteries were founded, especially in the north. The erection of monuments or carved crosses did not become general until some time after the foundation of these institutions in Saxon Britain. At this period, of course, there were no native stonemasons in Northumbria, nor indeed were there any until St. Wilfred and Benedict Biscop brought foreign workmen to build their abbeys.

After the conversion of the Saxons to Christianity, communication with the Continent became more frequent, and it was principally from Gaul and Italy that ecclesiastical MSS. and other decorative motives were first introduced to this country. These new forms of art were developed by the scribes in the illuminated MSS. by carvers in stone, and by other artificers in many different materials, though the manuscripts are the best preserved and most widely known remains of the art of this period. It is to the Continent, therefore, that Britain is indebted for the origin of those wonderful designs of foliage, sculpture work and interlaced plaitwork ornament executed during the Saxon-Celtic period from the seventh to the eleventh century. The carved foliage of this period, such as scroll-work with conventional bunches of grapes, are from the Classical vine : a symbolic emblem of the blood of Christ from early Christian times. Birds and beasts are occasionally included, involved in the foliage. This feature is non-Celtic, and wherever found is proof of Anglian influence from Northumbria.

By way of emphasizing this fact I cannot do better than quote the words of Prof. Lethaby, who so admirably sums up the leading position once held by this northern part of Saxon England. " It was at the end of the seventh century when the kingdom of Northumbria attained its zenith of power. Northumbria at this time in many respects led the civilisation of Europe. Nowhere else was there a scholar like Bede, nowhere a native poet like Caedmon, nowhere else was gathered such a group of great men, nowhere else was there a school of art like that which produced the Lindisfarne Book, the crosses of Bewcastle and Ruthwell, and the beautiful English coins of this period."

In St. Wilfred's time ancient Northumbria was the leading centre of cultivation and art, and it is almost certain that the carved free-standing stone cross originated at Hexham. At least, the leaf and fruit scroll ornament appears to have been first adopted there, and from this centre the idea travelled in all directions, northward as far as the South of Scotland, southward to the Humber and from sea to sea. The so-called cross of Bishop Acca, now in the library at Durham, and the Spital cross at Hexham, exhibit an early example of the vine scroll ornament. This class of decoration, it is almost certain, was the work of imported craftsmen from Italy or the east, introduced by St. Wilfred and Benedict Biscop.

The interlaced plait, set diagonally, was an ornament freely used. Knotwork was gradually developed from the plait by introducing breaks at regular intervals, and, as the style advanced, circular and triangular knotwork were evolved. Throughout western Europe this style

Wm George Footitt.

Portion of the Acca Cross.

of ornament prevailed from the sixth to the twelfth centuries, and it was carried further in Great Britain and Ireland than on the Continent. It has been stated that the plait was derived from basketwork or from weaving, but most probably the idea originated from the interlaced designs found so plentifully on Roman mosa

pavements ; and these in turn were derived from the guilloche, an ornament used in Roman architecture, which resembles skeins of worsted twisted together. In the early and finer Anglian work we find the knotwork well designed, close, and regularly spaced, while in similar work of the Viking age the knots became looser and less symmetrical.

Another ornament, mostly seen in Celtic areas, is the Key pattern, and may be described as that which bears a certain resemblance to the perforations in a key to allow it to pass the wards of the lock. This was, no doubt, copied from the Greek Fret, with this difference : when taken over by the Christians the pattern was turned round through an angle of 45 degrees, so as to harmonise directionally with that of the diagonally interlaced plait.

A non-Anglian motive is the re-entrant spiral ornament, which consists of circles connected with S or C shaped curves. The circles are filled in with spirals worked from the tangent points where the curves touch the circle, inwards to the centre. The S and C shaped curves take the form of a trumpet. This spiral is probably the only decoration that can be proved to have been borrowed from Pagan-Celtic art, and is mostly found upon the sculptured monuments of Ireland and Scotland. On the other hand, in Wales, Cornwall, and the Isle of Man, it is extremely rare, and the same may be said regarding its use in England, except upon illuminated MSS.

Animal and human forms upon Hiberno-Saxon monuments appear at an early date; at least, this is so with regard to Northumbria. For at Hexham were found three fragments of a panel, two of which are in Durham Library, showing foliage, human figures and animals carved in low relief. This panel has been restored tentatively, and it is possible it was executed in the seventh century, for from that time these *motifs* were the common stock-in-trade of the designers. The nonsense animals, or " Zoomorphs," are traceable from these by gradual degeneration. In the tenth century, when the artist could not draw, the animals grew wilder and the human figure was drawn very sketchily and round-shouldered.

Although Ireland may possess a large display of sculptured crosses, we have at Bewcastle and Ruthwell two monuments of this description which possess an interest and artistic quality in design and execution which nothing can surpass. With the fine Anglian work is associated a more graceful type of animal and bird, well designed ; the scrolls of leaves and fruit having flowing lines and rounded surfaces. Not until after the Danish invasion, in the ninth century, do we find dragons, bears and snakes carved upon the monuments. Designs depicting beasts of savage strength, true Scandinavian monsters, are portrayed biting their own bodies, limbs, or tails, or the body, limbs or tail of the beast immediately in front. Birds also were arranged on the same principle. In the tenth and eleventh centuries, Danish and Scandinavian art did not admit plant form in ornament. Serpent creatures are common in Celtic art, but there are no snakes shown in the Lindisfarne Book or on the carved monuments of the Anglian type. Reptilian creatures did not appear until the Anglian artists were working under Danish and Norse influence. Yet we have on Monkwearmouth porch creatures of the grotesque family !

It is impossible to fix dates of early carved Christian stones, although the expert archæologist is able to place

St. Martin's Cross, Iona
(Not earlier than 12th century)

them in their proper period, much in the same way as the geologists classifies the strata of the earth's crust. In this connection, therefore, I feel it will be of great assistance to adopt a method for the classification and dating of

the Anglian examples, which has been evolved by W. G. Collingwood as follows :

A Style is work of the period ending with the Danish invasion, c. 867.

AB Style is work done by surviving craftsmen and Danes, who learnt from the older traditions ; the overlap period till about 900, or in non-Danish districts later.

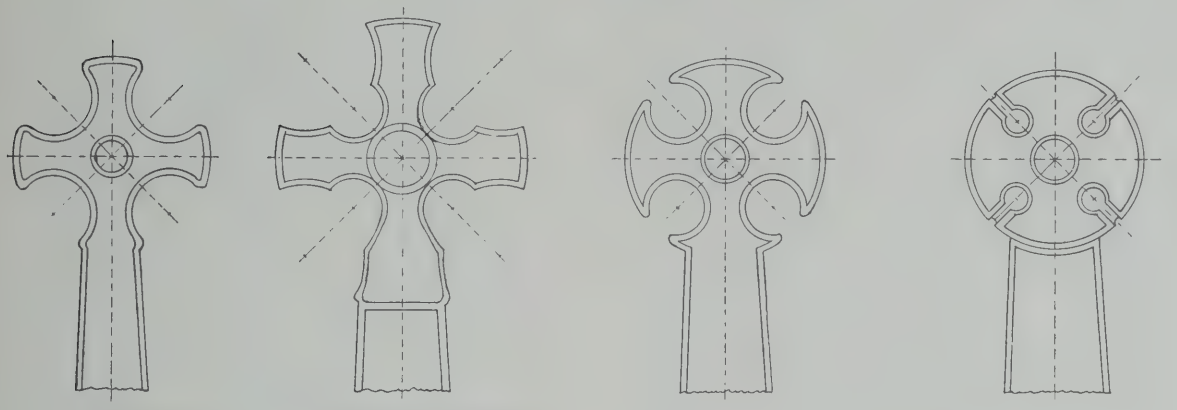
B Style is work done when Danish and Scandinavian taste asserted itself under the independent kingdom of York in the first half of the tenth century.

BC Style is work done when Danish taste was modified and Danish craftsmen improved under southern influence in the latter part of the tenth century and the earlier part of the eleventh.

C Style are the various developments of the eleventh century and early twelfth century, until Norman art superseded.

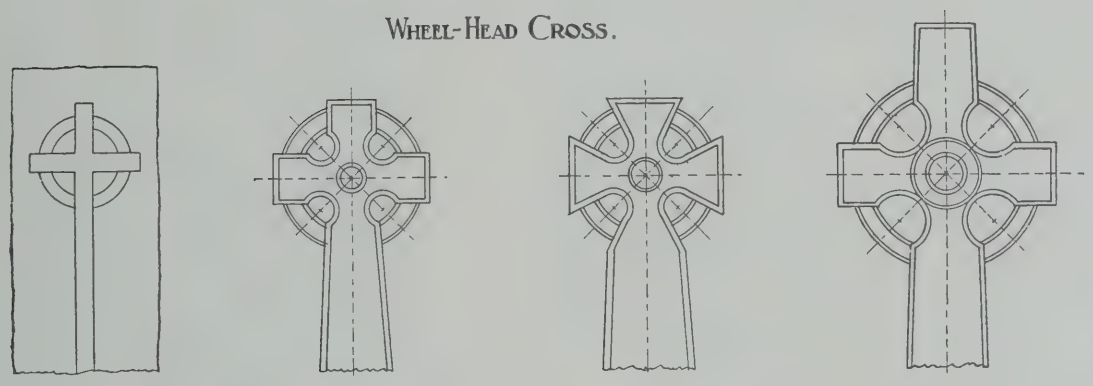
The history of the Anglian monument, briefly stated, is this. It may be said to have started from severe design and careful execution, followed by more florid effects, which reach their climax in the eighth century, declined in the ninth, followed by the tradition becoming partly lost upon the invasion of the Danes, c. 867. The invaders, after settling down, adopted the fashion of setting up grave monuments, which were carved by the surviving Anglian artists, whose work was, however, poor in style. Later, in the tenth century, the Danes borrowed their art from Ireland (or Scandinavia), which

Anglian Cross Head.



N°1 VIII *Century.* N°2. *Later* VIII *Century.* N°3. *Early* X *Century.* N°4. *Late* X *Century.*

Wheel-Head Cross.



Early IX *cent*ʸ. *Iona & Irish Slabs.* *Early* X *cent*ʸ. *Free Wheel Head. Isle of Man.* *Ordinary* X *Century Yorks & Cumberland.* *Late Scottish Iona & Kells.*

consisted of debased Anglian scrolls, plaits, strap-tangles and figures. They were always poor designers and could never draw the human figure or animals, but were content with grotesques, such as snake-tangles, and dragons tied up in their own tails. "They preferred regular snake-slings to symmetrical leaf-scrolls, and dragons to doves." Finally, after the eleventh century, this kind of ornament in England ceased altogether, although in Celtic districts the art was continued for some time after the Norman Conquest. The high-standing crosses of Ireland and Iona, for example, are now considered to have been erected during the tenth and the following centuries.

It would, therefore, be assumed that upon the finer type of Anglian crosses we find no Celtic ornament. Indeed, as has been pointed out by W. G. Collingwood, there are many plait-designs used by Anglian carvers not to be found upon sculptured stones in Celtic areas. Yet nearly all the knots common to Celtic and English work are found only on inferior examples of the Anglian stones of the Danish period. It was probably not until Ragnvald became King of York (919), bringing with him an Irish-Viking army, that we find a distinct opportunity for Celtic influence upon the monuments of the north.

Attention must now be directed to the evolution of the Anglian free-standing cross. From passages in the lives of the early saints of the fifth, sixth and seventh centuries, we are informed that, in many instances, crosses were erected in commemoration of varying events, such as those connected with the names of saints, or even secular events, as well as funeral crosses, and crosses proclaiming the Gospel, miracles, the marking of enclosures, and preaching crosses. Some of these would be Pagan menhirs converted to Christian use, some were of wood, and, again, others would be of rough-hewn stone. There is no doubt that the earliest monumental cross was of wood, formed of an upright log roughly squared, with a short piece of similar section mortised across it to form a transome. A plain cross of this material, we are informed by Bede, was erected by King Oswald at Heavenfield, four or five miles north of Hexham, in the year 635. Thus from the simple wooden cross it would appear that the stone cross head may have been evolved, going through developments up to the penannular Whithorn type, which is of the late tenth century. There have been four main types of cross heads so evolved in England up to this period, all of which are represented in remains, with the exception of St. Oswald's; the development, says W. G. Collingwood, is not theoretic but historical.

First in order of evolution is the eighth century free-armed head which took the form of St. Cuthbert's pectoral cross.

(2) In the more fully developed A style, the cross head, in great crosses, gained in size and variety of outline. The terminals of the arms were expanded slightly, or spatulated. This type of head was the model selected by the designer of the Bede Memorial, at Roker, Sunderland. With coarser ornament on the crosses, the heads, likewise, are coarser. "The terminals of the arms are oblong, and the armpits instead of being gracefully curved, are mere bites taken out of the stone."

(3) Early in the tenth century the cross head had undergone a further change. The terminals are more expanded, hence they are known as fan-shaped arms.

(4) Later in the same century we arrive at the Whithorn, or penannular type, which takes the form of a circular head with four holes countersunk, sometimes pierced through. The cross arms are now so expanded that they are almost touching each other; they are each separated by a narrow groove; but for the grooves this type would be a wheel-head cross.

Independently of the Whithorn development the wheel-head cross was invented and came into fashion in the tenth century. It originated in the Isle of Man. This centre of origin, it has been stated by W. G. Collingwood, may be proved by plotting on a map, when it will be found that this type of cross-head ran in lines radiating from the Isle of Man by the Viking routes, the first to Penrith, and so on, over to Yorkshire, wherever the Vikings went.

It was not a Norse idea, nor yet strictly Celtic, it was simply a fashion of the later period adopted nearly everywhere when people tired of the older types. "There are more Wheel-heads (other than Cross-slabs) in the North of England than in Celtic countries."

If illustrated books of Manx crosses be consulted, one may there trace the early wheel-head cross-slab in the act of losing its margin, being cut away into the free-wheel head cross. Thus in Celtic areas we find that erect cross-slabs of the early ninth century have the wheel formation incised upon them. Early in the tenth century the surrounding slab portion disappeared and we have the free-wheel head as found in the Isle of Man. Later in the same century the limbs of the cross, instead of being square ended, are fan-shaped.

This type is frequently found in Yorkshire and Cumberland. Finally we have the fully developed wheel-head cross similar to those still standing in Ireland and Scotland.

As regards the type now being discussed it has been stated that "The high crosses still remaining in Ireland are 45 in number, 32 of which are richly ornamented, and eight of these bear inscriptions regarding persons who died between 904 and 1150 A.D."

From the foregoing it will be gathered that the wheel-head or Celtic cross was not of an early origin.

We find that while most of the Scottish and Manx crosses are relief slabs, the shafts of the early Anglian free-standing crosses are square in section, and those of Danish craftsmanship are thin and similar to the Gate-post type. Then comes a revival in the latter part of the tenth century, when better mason-craft prevailed, and in consequence the cross-shafts of square section were again revived. In addition to the foregoing there are also round-shafted crosses, wherein the section of the lower part being circular that of the upper portion is square. This type of shaft, although uncommon, is found in Cumberland, Yorkshire, Staffordshire, Cheshire, Nottinghamshire and Wales; but the tallest complete specimen exists at Gosforth, Cumberland. The date of these examples range from about 800 to after 1000 A.D.; that at Gosforth is probably c. 1000.

There are many memorial sculptured remains of pre-Norman character existing in the county of Durham, the earliest of which are more beautiful, distinctly of the Anglian School, while the later examples are inferior both in design and execution. At the Library, Durham

Cathedral, will be found the most numerous collection of sculptured stones, where probably remains of the Acca cross will be considered the principal example of Anglian work. Acca died in 740. The so-called St. Oswald's cross shaft is also of interest, and is of the late tenth

CROSS OF ABOUT A.D. 1000 AT GOSFORTH, CUMBERLAND

century. But the most important find of this collection in the city of Durham occurred in 1891, when the heads of four crosses were discovered in the foundations of the Chapter House. Some of these exhibit crude carving of the Crucifixion, and are apparently also of late tenth century.

In this collection will be noticed specimens of roof-tombs, known as " Hogbacks." They are coped stones with a curved ridge, hence the name " Hogback." Some are a copy in miniature of a house, the roof portion is tegulated (tiled), with gables at either end, and become " little houses of the dead." Later types of these " hog-backs " are mostly decorated with plait or knotwork, and at either end always have a bear's head, usually muzzled, and facing inwards. This latter type of grave cover came into fashion about the end of the ninth century under Danish rule. Brompton, near Northallerton, seems to have been the centre at which the bear-hogback was intro-duced. They are not Celtic in origin, but Anglo-Danish and Norse evolved from English shrine tombs. There are five of these stones in the Durham Library from Brompton.

In the vestry, at St. Peter's, Monkwearmouth, there is an interesting collection of pre-Norman fragments. Some of these, apart from the turned balusters, are of Danish times, but one piece in particular is of outstanding merit. It is a little corner of a sculptured slab, and has been described by Bishop Browne " as the most beautiful bit of work of this character that exists." It comes nearer to a representation of the Lindisfarne Gospels than any-thing else which can be shown. In addition to this collection there are several sites throughout the county of Durham where examples may be studied. For instance, at Bishop Auckland, in the Church of St. Andrew, com-monly called South Church, there is an interesting group, nearly all of which were recovered from the walls of the south transept during building operations in 1881. One of these cross shafts is unquestionably of very high merit and has higher artistic qualities than any other example of Anglian carving in the county. Its sculpture work on the narrow sides of the shaft has the vine-scroll, with animals and birds involved, similar to that depicted upon the shafts at Ruthwell and Bewcastle ; its date is probably eighth century.

At Aycliff are many fragments of pre-Norman workman-ship, but, of particular interest, there are in the churchyard the remains of two cross shafts. The circular base of one is ancient. The broader of the two shafts shows a repre-sentation of the crucifixion, with sun and moon symbols at the head. On either side of the cross human figures are standing, each armed with a spear ; there are also figures sculptured above the latter, and near the top are fragments of interlaced animals ; other panels show an interlaced cord plait. This work is apparently late Anglian, before the Danish invasion.

A catalogue of the remaining sites in the county of Durham may prove of interest, and is as follows :— Billingham, Chester-le-Street, Coniscliffe, Darlington, Dinsdale, Elwick Hall, Escombe, Gainford, Hart, Haughton-le-Skerne, Hurworth, Jarrow, Norton, Sock-burn, Staindrop, Stainton-le-Street, and Winstone-on-Tees. At Sockburn there are 25 stones of this period. One cross-shaft has the key-pattern ornament, and is of Danish origin. Here will also be seen a hogback grave-cover of late date.

There remains to be considered two of the most impor-tant pre-Norman Anglian crosses existing in the British Isles, one at Bewcastle, in Cumberland, and the other

at Ruthwell, in Dumfriesshire. These sister crosses undoubtedly have been the subject of more literary efforts and controversy than any other two monuments erected during the period under review. The first of these, the Bewcastle shaft, stands in the graveyard of St. Cuthbert's Church. It is a monolith 14 ft. 6 in. high, with a base measurement of 1 ft. 10½ in. by 1 ft. 9 in. The material is of a very compact native sandstone. Each of the four faces is divided into compartments or panels which display in bold relief human and animal sculptures, fruit-bearing plants with involved birds pecking at the fruit; there is interlaced knotwork in other panels. The angles of the shaft have each a roll-mould, as was usual in most Anglian work. In addition there are also inscriptions in Anglian runes, and upon the south face is a sundial marked according to the octaval system of the Angles. This system consists in dividing a semicircle by lines into four divisions; the vertical line indicating noon (Sext), that on the right hand, nine (Terce), and that on the left hand, three o'clock, or None.

The cross at Ruthwell resembles in many respects that at Bewcastle as regards its sculpturesque figure panels and foliage panels; therefore it is almost certain that these two monuments were both designed and executed by the same craftsmen, or at least by craftsmen of the same school. Being originally in two pieces of local dark purple sandstone, the shaft is not in consequence a true monolith; and, unlike the moulded angles of Bewcastle cross, the angles at Ruthwell are square, thus affording suitable surfaces to receive inscriptions. And, most unusual of

West View North View East View South View

BEWCASTLE CROSS

all, there are no cord plait or knotwork designs upon any of the panels. This cross has had a most varied and chequered career, both legendarily and historically. According to tradition it was brought to the site and a church was subsequently built over it.

Historically we know that by order of the General Assembly in 1642 the cross was thrown to the ground and broken. At that date it stood near the altar in the church. From that time it lay in fragments inside the church, and, at a later date, these were removed to the churchyard. In the year 1803, however, the fragments were gathered together and re-erected in the garden of the manse by the Rev. Dr. Duncan. Then in 1823 the doctor caused to be added to the shaft a new sculptured transome to replace the missing members of its crowning finial. Ultimately, in the year 1887 an apse was specially built on the north side of the church wherein to house and preserve the cross, in which enclosed and sheltered site it remains at the present time. One of the panels of this cross displays a view of the crucifixion, of early type, and in fact, all the decorations upon Ruthwell and Bewcastle crosses have recently been the subjects of much discussion by modern writers with a view to arrive at the date of these two monuments.

For the present, however, it only remains to briefly refer to some of the opinions expressed upon the subject.

A B C D

Fig. 1—North and West Sides Fig. 2—South and East Sides

THE RUTHWELL CROSS

(From an anonymous drawing made about 1860)

In 1912, Professor A. S. Cook, of Yale, U.S.A., published his opinion that the crosses were of the twelfth century.

Dr. King Hewison in 1914 came to the conclusion, in his book *The Runic Roods of Ruthwell and Bewcastle*, that these two monuments were erected in the tenth century. In 1921 Professor G. Baldwin Brown considered they had been erected towards the end of the seventh and not later than the beginning of the eighth century. At the same time he also expressed the opinion that the Ruthwell cross was erected to the order of Alcfrith after his victory over the Picts (c. 675) and that at Bewcastle is a funeral monument also in memory of Alcfrith, son of Oswy, King of Northumbria, and his wife, Cuniburga, daughter of Penda, of Mercia.

I may add that Professor W. R. Lethaby is in agreement with Professor G. Baldwin Brown as regards the date, but, on the other hand, W. G. Collingwood contends for a middle date, by placing them in the eighth century, and at the same time disagrees with Dr. Hewison because, as he states, in the tenth century the kind of work then being done was wholly unlike the styles of these famous crosses at Bewcastle and Ruthwell.

In conclusion, we have found in tracing the evolution of the pre-Norman crosses that Hiberno-Saxon art was not of purely native origin, but was borrowed or introduced from the Continent. But we also find that, after having being taken over, it was developed by our native artists, who put into it so much of their own individuality that it eventually became an entirely original style the like of which the world had never seen before.

*** The author desires to express his indebtedness to Greenwell's "Sculptured Stones in the Cathedral Library, Durham," "The Handbook of St. Peter's, Monkwearmouth," and to various other authorities for the illustrations which appear in his Paper.

Correspondence

MR. BAGENAL'S PAPER ON ACOUSTICS.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—It was eloquent testimony of the interest the subject had aroused in those present at the meeting on 17 November that, in spite of the room rapidly emptying by 10 p.m., for the catching of country and suburban trains, there were still remaining those with nerve enough to keep the meeting going until nearly 10.30 o'clock. Not having quite the temerity, on the occasion of one's first attendance at an Institute Paper after an absence of some twelve years abroad, to seek to hold the meeting for yet another quarter of an hour into the night, I venture to offer the following contribution to the discussion of Mr. Bagenal's Paper, taking comfort in the fact that it rests entirely with members themselves as to whether or not they avail themselves of a perusal of your valuable contributed notes. Otherwise, one rather wanted to tell the scientists who were present that if they can but invent a non-reverberating plaster they will be doing a truly imperial work, and that they will earn the lasting gratitude of vast numbers both of Indians and Englishmen in India. For in that favoured land one of the most atrocious forms of construction ever standardised and blessed with official countenance is held sacrosant. I refer to the "jack-arched" ceiling, the origin of the term being derived, one can only imagine, from the fearsome type of centring or "jacking-up" used in its construction. It consists of not one more or less harmless segment, as No. 3, Fig. 3, of Mr. Bagenal's illustrations, but of a series of, say, five segments to a room perhaps some 25 ft. wide: brick arches springing from either the lower or upper flange of rolled steel joists and duly plastered on the soffits. The room as often as not square, with a height of some 20 ft. or so—an average height—the whole as near as may be a *cube*. I should dearly like to see Mr. Bagenal's diagram of the behaviour of such a ceiling under the influence of some five or six people in fervid conversation. Moreover, in the "hot weather"—i.e., for seven months in the year—nor carpet nor hangings of any kind enter to help matters; a floor of concrete or, perchance, mosaic; a minimum of furniture. Even for the other five months, with normal hangings, carpets, etc., again in use, the conditions are bad enough. It may, therefore, confidently be asserted that there is a future for the plaster which will defeat the jack-arch if it be but placed upon the Calcutta market. It must, however, to be successful, be a plaster that can be made up with but little supervision, and that can be rendered with unskilled—i.e., *unapprenticed* labour.

For economy of sectional construction, and for the climatic and lighting conditions which presented themselves very forcibly at the time, a section somewhat like Mr. Bagenal's section 3, Fig. 3, was adopted in certain court rooms in Allahabad in 1912. They were not a success acoustically. But very little put them right. The ends, from height of judge's dais to springing line of ceiling, were already subdivided into large panels by plain plaster ribs: the plaster in these panels was scraped off, stout canvas was stretched on a lath framing the exact thickness of the plaster removed, and whitened as the walls. The framing was fixed to plugs with screws so that it could be taken out and cleaned at back or re-stretched if necessary, though it has not required to be touched in, at all events, the course of ten years under very considerable variations of climate. There were, in their forbearance, no subsequent complaints from either bench or bar. The ceilings were not touched. But let it be admitted that with a hard English plaster, as against the much softer Indian mixture, the measures taken might have been rather less efficacious.

All this is not to say that the measures taken were

viewed with any degree of complacency, or that one particularly likes the idea of canvas with a hollow back. Still, is it any less uncomfortable than if padded up with felting of one kind or another ; and is it, after all, any worse than the space behind any ancestral portrait ? But what struck one at the time was the comparative efficacy of dealing with quite a small proportion of the wall surface. For not only were the ceilings not touched, as noted above, but the side walls were also left alone, which prompts one to the thought as to whether we may not be liable to run to the extreme of *over*-cushioning our walls.

The height and necessary bareness of rooms built for use in the hot weather in the plains of India (and doubtless also elsewhere) must always make it difficult to attain acoustic perfection, and it is therefore hoped that the full results of the research, experiments and practical tests which are being conducted by the Government of India for Mr. Baker will be made available for general use. Strikingly fine as the Hill Memorial Hall, University of Michigan, undoubtedly is, we must all have felt greatly relieved to think that we need not of necessity design all our halls on the parabolic principle, and that the researches which the National Physical Laboratory have in hand promise to help us through on some lines rather less disconcerting to the average mortal architect. Yet one wondered whether Mr. Bagenal would really advocate a 45-degree reflector over a pulpit or rostrum, or whether, if he had a free hand, he would not prefer something on even roughly paraboloid lines, which, it is understood, have already been tried in that connection.

FRANK LISHMAN [*F.*].

DIOCESAN ADVISORY COMMITTEES.

10 *St. John Street, Bristol.*

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—On the other side from Mr. Adkin's letter in your paper dated the 20th instant, I would bear witness that in the dioceses where I have had experience there has been no suspicion of a dishonest motive underlying the recommendations made by the Advisory Committees.—Yours sincerely,

P. HARTLAND THOMAS, *Licentiate*.

IMPROVIDENT ADVERTISING:

22 *Sackville Street, London, W.*1,
1 *January* 1925.

To the Editor, JOURNAL, R.I.B.A.,—

DEAR SIR,—I write to protest against the inundation of calendars and almanacs, which have assumed undue quantities this year. It is an immense waste of material and time, and might well cease.

Is there no means of notifying the various contractors of this great waste, which can do no good, but only adds considerably to the contents of the waste-paper baskets and to our irritation ?

Possibly this letter may have some effect.—Yours faithfully, WALTER CAVE [*F.*].

HOUSING.

Mr. James Ransome wishes to thank those members of the profession who have kindly communicated with him in response to his letter published in the JOURNAL on 22 November, and to announce that he has discussed and deposited with the Director General of Housing at the Ministry of Health the notes given below, which he understands will be considered by the authorities responsible for any housing policy which the Government may have in mind :—

HOUSING.

Alternatives as to ownership of small dwellings.

STATE OWNERSHIP, OCCUPIER'S OWNERSHIP, AND PRIVATE LANDLORD'S OWNERSHIP.

Objections to State Ownership :

1. Inability to build or maintain economically and consequent increase in cost of building generally.
2. Inability to cater for individual requirements.
3. Inability to control rents which are dictated by exigencies of politics.

Objections to Occupier's Ownership :

1. Beyond the means of the less well paid wage-earners.
2. Inimical to the mobility of labour.
3. Unsuited to fluctuating family requirements. Otherwise admirable for those who can afford and wish to own the houses they occupy.

Objections to Private Landlord's Ownership :

None, but impracticable for the following reasons :—

(*a*) Impossibility of competing with uneconomic rents established by State ownership and by rent restrictions.
(*b*) Penalisation in the matter of repairs.
(*c*) Excessive rates and taxes.
(*d*) Inflated cost of building due to Building Acts and Bye-laws, the Dole, and limitation of labour imposed by Trade Unions.

Remedies :

(*a*) The sale of all State-owned houses erected under post-war Housing Schemes, their value being first enhanced by exempting them from rates and taxes for a period of three years.
(*b*) Termination of rent restrictions at the end of twelve months.
(*c*) Limitation of landlords' liability to a percentage on the rent, such percentage to be remitted to the tenant if not expended upon repairs.
(*d*) Exemption from rates and taxes of all houses below a specified size and completed within twelve months for a period of three years.
(*e*) Suspension of all building restrictions not essential to public safety.

Deletion of the word " suitable " before " employment " in the conditions qualifying for receipt of the Dole.

Protection of unorganised labour. Secret ballot for Trade Unions and their inclusion within the scope of laws governing other associations.

A graduated subsidy proportionate to the size of houses, not exceeding a specified size and built within a period of twelve months.

Loans to builders on easy terms.

Compulsory sale of land required for small dwellings.

Abolition of Slums :

State purchase and re-sale subject to rebuilding conditions.

Preservation of St. Paul's Cathedral

SECOND INTERIM REPORT OF THE EXPERTS' COMMISSION.

The Commission of five experts appointed in 1921 to consider the desirability or otherwise of revising the method of repairing the damaged parts of St. Paul's Cathedral has addressed a second interim report to the Dean and Chapter of St. Paul's. It represents the unanimous opinion of the Commission.

The report is as follows :

December 29, 1924.

The Dean and Chapter of St. Paul's.

GENTLEMEN,—At a meeting at St. Paul's on Friday, 5 December, it was decided that a second interim report should be made giving the result of the further examination which has been made by your Commission since their report of 1 June 1922. In that report your Commission referred to the condition of the masonry of the main piers, and the consideration of your Commission has for some time been largely concentrated on the best methods of consolidating the interior structure of the main piers, which carry a considerable proportion of the great load of the drums, the inner and outer domes, and the interior cone, which strengthens the outer dome itself and also carries the external lantern and cross above.

Various experiments have been made with the object of strengthening the interior rubble filling of these piers by injecting cement under pressure into the cavities that exist in the rubble filling. This has presented special difficulties owing to the character of the filling.

Your Commission have decided to recommend the adoption of the plan which has been experimentally used on the north-east pier, and with which they are satisfied, for although it is practically impossible to say that the whole interior of the pier has been completely consolidated, they are of opinion, after examination, that sufficient has been done to strengthen it satisfactorily, such treatment to be followed by a gradual replacement of the broken external facing stones as already carried out by the surveyor of the fabric, Mr. Macartney, on the south-west pier. If this treatment is adopted, your Commission believe a new lease of life will be given to the piers at a reasonable expenditure of both time and money and without serious disturbance to the services.

The question of approximate cost is not easy to estimate, but, taking the actual cost of grouting and cementing part of the north-east pier, and the actual cost of repairing the stonework to the south-west pier by Mr. Macartney, the cost may be put at from £120,000 to £140,000.

Your Commission have also discussed the alternative of reconstructing the piers entirely, and, while they do not doubt the possibility of doing this, though it might involve the taking down of the dome and its supports, yet in view of the enormous cost and the necessity of closing the greater part of the Cathedral for several years—to say nothing of the great risk of disturbance involved—your Commission are convinced that the wiser course would be to grout and to repair the piers in the first instance, as above indicated, leaving it to a later generation to undertake the larger operation should it at any time become absolutely necessary.

Your Commission therefore recommend that the grouting of the piers on a carefully prepared programme, together with the repairs to the stonework, should be proceeded with. They wish to record their opinion that this should be done forthwith. It will naturally take time to carry out, but unless put in hand at once and vigorously pressed to a conclusion, they consider that the situation may rapidly become grave.

We are, Gentlemen, yours faithfully,

ASTON WEBB.
E. C. TRENCH.
BASIL MOTT.
G. W. HUMPHREYS.
MERVYN MACARTNEY.

THE ANNUAL CONVENTION OF THE AMERICAN INSTITUTE OF ARCHITECTS.

The President of the Royal Institute of British Architects desires to bring to the notice of all members of the R.I.B.A. and of the Allied Societies the following letter which he has just had the pleasure of receiving from the President of the American Institute of Architects :

The American Institute of Architects,
Washington, D.C.
November 28 1924.

DEAR SIR,—The American Institute of Architects extends to you and all the members of your organisation a cordial invitation to attend the 58th Annual Convention of the Institute. The Convention will occur in New York City, 20 to 24 April 1925. In conjunction with the Convention an Architectural Exhibition will be held from 20 April to 2 May.

The Architectural League, painters and sculptors, landscape men and town planners, and, in fact, also the building industry, are joining hands with the Institute to arrange an " Exposition of Architecture and the Allied Arts," which promises to be unique. Our brother architects of other countries we hope will be interested to have some of their best work represented and to have some of their ablest members present.

Following this formal invitation it is our desire, if it please you, that further detailed information shall be sent you regarding the Convention programme and the Exhibition as well.

Hoping that we may have the privilege of welcoming you and other representatives of your society, I beg to subscribe myself,—Faithfully yours,

(Signed) D. EVERETT WAID,
President.

J. Alfred Gotch, Esq., F.S.A.,
President R.I.B.A.

It is hoped that a substantial number of British Architects will be able to take advantage of this most welcome invitation, and that they will in due course send their names to the Secretary of the R.I.B.A. for transmission to New York.

Obituary

DEATH OF SIR WILLIAM EMERSON.

It is with great regret that we have to announce the death of Sir William Emerson, Past President R.I.B.A., at Shanklin, Isle of Wight, on the 28th December. Sir William Emerson was President of the Institute from 1899 to 1902, and for some years had been in a precarious state of health. Sir William was 81 years of age. Further reference to his career and association with the R.I.B.A. will be published in the next issue of the JOURNAL.

THE LATE ARTHUR WILLIAM SHEPPARD [*A.*].

It was my privilege to be closely associated with Mr. Sheppard for over fifteen years and it has occurred to me that it might interest some of our members if I recalled a few facts concerning him.

He served with Mr. Stanley Peach from 1885 for three years and subsequently with the late Mr. Charles Bell until 1890, when apparently he joined the staff of the late London School Board under Mr. Bailey. Sheppard gave occasional assistance to Mr. Sprague and the late Mr. Frank Matcham upon certain theatre work and designed a large part of the Coliseum, the front of Wyndham's Theatre, and the buffet of the Hippodrome for Mr. Frank Matcham, and his twenty-four years of School Board work undoubtedly influenced the character of these buildings in the London area. Although he was in a public office he carried out some private work and entered for certain competitions. With Mr. Burkinshaw he won a competition for the Chelsea Dispensary which was erected during the first decade of the present century.

For the purpose of creating a practice Mr. Sheppard and I opened an office in the Adelphi and subsequently moved to 43, Chancery Lane, where we designed and subsequently erected the printing works in Baldwins Place for Messrs. Howard and Jones, and also the tea room, foyer and decorations of the Lewisham Hippodrome for Mr. Frank Matcham (*inter alia*). There is a fountain designed by him in Brockwell Park dedicated to Alderman Candler.

When Mr. Sheppard joined the L.C.C. he found his time rather more fully occupied, and the continual strain of evening competition work necessitated our dissolving partnership and the late great war prevented any further architectural enterprise being developed.

The Institute well knows the good work which Mr. Sheppard put in as honorary auditor of their accounts, and in this respect they will miss him very much because of his trustworthy integrity and charming personality, which was coupled with a keen sense of humour.

He died at the age of 56 and was interred at West Norwood Cemetery.

ALBERT E. BULLOCK [*A.*]

MR. WATERHOUSE'S FUNERAL.

The funeral of Mr. Paul Waterhouse took place at Yattendon, Berkshire, on Tuesday, 23 December 1924.

Among those present were :—Sir John Simpson, K.B.E., Past-President R.I.B.A. ; Mr. Arthur Keen, Hon. Secretary of the R.I.B.A. ; Sir John Burnet, A.R.A., F.R.I.B.A. ; Mr. H. M. Fletcher, F.R.I.B.A., Hon. Secretary of the Board of Architectural Education ; Mr. Alan E. Munby, F.R.I.B.A., Past-Chairman of the Science Standing Committee of the R.I.B.A., representing the York and East Yorkshire Architectural Society ; Mr. F. T. Verity, F.R.I.B.A. ; Mr. W. G. Newton, F.R.I.B.A. ; Mr. Hope Bagenal, A.R.I.B.A. ; Mr. L. Sylvester Sullivan, representing the Architectural Association of London ; Mr. Harry Hutt, F.R.I.B.A., Hon. Secretary of the Berks, Bucks and Oxon Architectural Association ; Mr. E. J. Sadgrove, F.R.I.B.A., Past-President of the Society of Architects ; Mr. E. Stanley Hall, F.R.I.B.A., Past-President of the Architectural Association ; Mr. Edward Warren, F.R.I.B.A., President of the Berks, Bucks and Oxon Architectural Association ; Mr. S. Hurst Seager, F.R.I.B.A., representing the New Zealand Institute of Architects ; Mr. Ian MacAlister, Secretary of the R.I.B.A., representing Mr. J. A. Gotch, President of the R.I.B.A., and Major H. C. Corlette, F.R.I.B.A., representative in England of the Federal Council of the Australian Institutes of Architects ; Lt.-Col. H. P. L. Cart de Lafontaine, F.R.I.B.A., representing the Franco-British Union of Architects ; Mr. Arthur T. Bolton, F.R.I.B.A. ; Mr. F. H. Lloyd, F.R.I.B.A. (Newbury) ; Mr. Arthur Blomfield, F.R.I.B.A., representing the Surveyors' Club ; Mr. Detmar Blow, F.R.I.B.A. ; Mr. H. Whiteman Rising, F.R.I.B.A. (Reading) ; Mr. C. B. Willcocks, F.R.I.B.A. (Reading).

The following were unfortunately prevented from being present :—The President R.I.B.A. ; Mr. Percy Thomas, F.R.I.B.A., President of the South Wales Institute of Architects ; Mr. J. Arthur Smith, F.R.I.B.A., Vice-President of the Hampshire and Isle of Wight Association of Architects ; Mr. T. R. Milburn, Past-President of the Northern Architectural Association ; Sir Giles Gilbert Scott, R.A., F.R.I.B.A. ; Mr. Charles Woodward, A.R.I.B.A. ; Mr. Heaton Comyn, F.R.I.B.A. ; Mr. A. E. McKewan, A.R.I.B.A., President of the Birmingham Architectural Association ; Mr. Max Clarke, F.R.I.B.A. ; Mr. D. Barclay Niven, F.R.I.B.A. ; Mr. W. S. Purchon, A.R.I.B.A. ; Mr. H. P. Burke Downing, F.R.I.B.A. ; Mr. W. A. Pite, F.R.I.B.A. ; Mr. H. L. Paterson, F.R.I.B.A., President of the Sheffield, South Yorkshire and District Society of Architects and Surveyors ; Mr. G. Hornblower, F.R.I.B.A. ; Mr. G. C. Lawrence, F.R.I.B.A., President of the Wessex Society of Architects ; Mr. W. T. Jones, F.R.I.B.A., President of the Northern Architectural Association ; Mr. Stephen Wilkinson, F.R.I.B.A., President of the York and East Yorkshire Architectural Society ; Mr. William H. Ashford, A.R.I.B.A. ; Mr. Herbert A. Welch, F.R.I.B.A. ; Mr. Raymond Unwin, F.R.I.B.A. ; Sir Banister Fletcher, F.R.I.B.A.

A memorial service for Mr. Waterhouse was held at St. George's Church, Hanover Square, on Monday, 5 January. There was a large congregation and the beautiful service was fully choral. Among those present were :

Mr. P. H. Adams, Mr. Maurice B. Adams, Mr. Louis Ambler, Mr. W. H. Atkin-Berry, Mr. Henry V. Ashley, Mr. Herbert Baker, A.R.A. ; Mr. R. W. Baxter, Mr. A. Berkshire, Sir Reginald Blomfield, R.A., Litt.D. ; Mr. T. A. Darcy Braddell, Mr. A. Burnett Brown, Mr. A. E. Bullock, Mr. Walter Cave, Mr. and Mrs. George Carter, Mr. Max Clarke, Mr. M. O. Collins, Mr. O. H. Collins, Mr. Heaton Comyn, Mr. R. E. Crossland, Major H. C. Corlette, O.B.E., F.S.A. (representing the Federal Council of the Australian Institutes of Architects) ; Mr. L. A. Culliford, Mr. Horace Cubitt, Mr. H. W. Currey, Mrs. Crowder and household, Mr. T. B. Daniel, Mr. W. R. Davidge, Mr. E. Guy Dawber, F.S.A., Vice-President R.I.B.A. ; Mr. Rudolf Dircks, Mr. P. J. Fay, Mr. Horace Field, Mr. and Mrs. H. M. Fletcher, Mr. Edward Gabriel, Mr. James S. Gibson, Mr. F. T. W. Goldsmith, Mr. W. Curtis Green, A.R.A. ; Mr. Gordon, Mr. J. Alfred Gotch, F.S.A., President R.I.B.A. ; Mr. H. Austen Hall, Mr. Stanley Hamp, Mr. E. Vincent Harris, Mr. W. H. Harrison, The Rev. Dr. Haynes, Mr. Everard J. Haynes; Mr. Edward Hewetson, Mr. George Hornblower, Mr. George Hubbard, F.S.A. ; Mr. and Mrs. W. G. Hunt, Mr. Gilbert Jenkins, Mr. H.V. Lanchester, Mr. G. C. Lawrence (President of the Wessex Society of Architects) ; Mr. Frank Lishman, Mr. Henry Lovegrove, Mr. H. C. Macfarlane, The Hon. A. McGarel-Hogg, Mr. H. E. Mathews, Mr. A. A. Messer, Mr. G. A. T. Middleton, Mr. E. Arden Minty, Mr. E. C. P. Monson, Mr. J. R. Moore-Smith, Mr. F. Winton Newman, Mr. D. Barclay Niven, Mr. George Northover, Mr. Harold Oakley, Mr. Francis Osler, Mr. H. L. Paterson (President of the Sheffield Society of Architects) ; Mr. Godfrey Pinkerton, Mr. W. A. Pite, Mr. E. Turner Powell, Mr. A. N. Prentice, Mr. D. S. Prosser, Mr. W. E. Riley, Mr. Llewellyn Roberts, Mr. Harold S. Rogers (Chairman of the Oxford Society of Architects) ; Mr. and Mrs. H. Ryan-Tenison, Mr. E. J. Sadgrove, Lord Stanmore (representing St. Batholomew's Hospital) ; Mr. H. D. Searles-Wood, Mr. W. H. Seth Smith, Sir Giles Gilbert Scott, R.A., Mr. Herbert Shepherd, Mr. W. B. Simpson, Mr. J. Arthur Smith (representing the Hampshire and Isle of Wight Architectural Association); Professor R. Elsey Smith, Mr. H. T. Sugden, Sir Henry Tanner, C.B., I.S.O. ; Mr. Walter J. Tapper, Mr. Sydney J. Tatchell, Sir A. Brumwell Thomas, Mr. E. P. Thompson, Mr. F. W. Troup, Mr. Frank T. Verity, Professor Wagstaff (representing the Royal Society of Literature) ; Mr. Edmund Walters (representing Mr. Detmar Blow) ; Mr. E. P. Warren, F.S.A. (President of the Berks, Bucks and Oxon Architectural Association); Mr. and Mrs. Michael Waterhouse, Mr. W. E. Watson, Mr. Maurice E. Webb, D.S.O.; Mr. Herbert A. Welch, Mr. Roland Welch, Mr. W. Henry White, Mr. H. W. Wills, Mr. W. J. Wilsdon, Mr. Edmund Wimperis, Mr. Frank Windsor, Mr. Wm. Woodward, Mr. Frank Woodward, Mr. T. C. Yates, Mr. Clyde Young, Mr. Keith Young.

PLANNING FOR GOOD ACOUSTICS.

In the issue of the R.I.B.A. JOURNAL of 5 December Mr. G. A. Sutherland, in the discussion on Mr. Hope Bagenal's paper on " Planning for Good Acoustics," is reported as having said that the New Oxford Dictionary was published in Edinburgh. This, of course, was an error : the Dictionary is published by the Oxford University Press in London, although the firm have a depot in Edinburgh.

THE STORAGE OF IMPORTED TIMBER.

The following report is published at the request of the Science Standing Committee for the information of members: —

A visit was made by Mr. H. V. Milnes Emerson and Mr. Francis Hooper, members of the Science Standing Committee, on the 18th June last, to the Surrey Commercial Dock for the purpose of inspecting the conditions under which imported timbers are stored in readiness for disposal.

Mr. C. A. Daubney [*F.*], who called the Committee's attention to the matter, was there by invitation, and two representatives from the Port of London Authority took us through a portion of the Dock premises.

It appears that when timber is imported, the owners can remove it at once from the Docks or allow it to be stored there, either under cover or in the open air, paying the Port of London Authority a rent.

The timber under cover is generally in lofty sheds open at each end. When it is stored in the open there is, of course, no protection from the weather. It seems that whether the timber is stored under cover or in the open, the stacks are supported a short distance off the ground on pieces of timber called " dunnage," which rests directly on the ground. When once the timber is stacked, apparently the Port of London Authority takes no responsibility with regard to it, and further consignments of the same material belonging to the same owner may be piled up on top.

Most of the timber seen was soft-wood in the form of match-boarding, wrot boards, deals and other sawn scantlings, also timber in balk from Canada and the Baltic Ports, including Swedish, Norwegian, Russian and Polish products. All classes and qualities of timber are stacked in the Dock.

A recent consignment, just off the ship, was ready for stacking. It was full of rot and decayed parts. Most of the pieces were not rectangular and were obviously from freshly cut sap wood. The bark was still adhering in places.

The foreman naturally helps himself off the top layers of the stack in question, so that as a matter of fact the bottom layers may remain there for a very considerable time. Stacks of timber were seen in the open air quite stained with age, and obviously they had been there for a long time. The timber on which they rested was in many cases rotted and the ground around was littered with broken and rotten pieces. Piles of miscellaneous timber were ready for sale. This timber was left over from dismantled stacks, much of which might be used for building work.

The following points emerge :—

First :—The utmost care should be exercised by architects in the approval of wrot boarding, as it may only be recently imported stuff, and as far as possible they should also be satisfied as to the conditions under which all classes of woodwork have been stored.

Second :—The rubbish which has accumulated round and under the stacks of timber, and which contains the spores of dry rot, should be cleared away, and every effort should be made to render the conditions under which the fresh timber is stored as free from sources of contamination as possible.

PHOTOGRAPHIC RECORD OF BUILDINGS.

It has been suggested that the R.I.B.A. should begin a collection of photographs of buildings in London which possess acknowledged architectural merit and are threatened with demolition so that an accessible record may be available for the use of members.

It is not possible at the present moment, owing to lack of accommodation in the Library, to begin such a collection, but it is hoped that it may be possible before long for the R.I.B.A., with the assistance of other Societies, to accumulate and house a representative collection of London work which is so rapidly disappearing. It has been suggested to the Allied Societies that they also should begin collections of this nature and so preserve a record of good local architecture.

Preliminary steps have already been taken to obtain from the appropriate authorities and societies information which will assist the arrangements for starting a collection when it is possible to do so. Particulars and photographs of little known works in London which members are able to supply will be welcomed.

TOWN PLANNING.

The R.I.B.A. Diploma.

Applications for admission to the next Examination for the R.I.B.A. Diploma in Town Planning, which has been arranged by the R.I.B.A. for its members and Licentiates, must be sent to No. 9 Conduit Street by 1 March 1925. Forms of application may be obtained on application to the Secretary R.I.B.A.

Architects may be reminded that this Examination enables them to prepare for practice in a field where the demand for qualified men at present exceeds the supply; and where for some years there is likely to be an increasing demand. It is very important that architects should not neglect this branch of work or the allied though more limited work of municipal housing. Such work affords great interest and special opportunity for the application of trained imagination and the art of design to the direct benefit of human communities.

If architects are to practise the art of Town Planning they must, however, make themselves masters in the science of the subject. This is not difficult in the sense of involving highly technical matters, but it is extensive, includes many subjects, and involves knowing something of the work of the surveyor, the municipal engineer and the industrial economist. To plan a town, or part of a town, the physical, industrial and commercial needs of communities must be understood, as well as the economic and legal limits within which it is practicable to work.

This work calls for a rather different combination of faculties from those which may enable an architect to distinguish himself in the designing of individual buildings; consequently, it offers success to men of slightly different make-up. The Examination has been arranged to give some guidance as to the kind of knowledge needed as well as to afford a test of competence in it.

THE ARCHITECTURE CLUB.

Sir Giles Gilbert Scott, R.A., was entertained by his fellow-members as the guest of honour at the seventh Dinner of the Club, held at the Hotel Cecil on 18 December, the President, Mr. J. C. Squire, being in the chair. In the course of the "few words" which had been allotted to him on the programme, the Chairman said that they were proud of the fact that the architect of so magnificent a building as Liverpool Cathedral, which had been generally acclaimed by both the Press and the public, should have been not only one of the original members of the Club, but also a member of the first Executive Committee. Referring to the work of the Club, he thought that most of his hearers would agree that architecture was now receiving more attention from the Press and the public than it had previously done within their memory, and he claimed that the Club had had some share in this, and that it had assisted in promoting good new buildings and preventing the disappearance of some good old ones. It had been decided not to hold an Exhibition in the spring, but the question of staging one in the autumn of 1925 was under consideration.

Lord Newton, in proposing "Architecture," coupled with the name of Sir Giles Gilbert Scott, said that he had constantly been struck by the opportunities which had been lost in London by the Victorian architects, and he could not but reflect how different the West End would appear if it had been the property of a great ground landlord with an artistic temperament like the late Lord Plymouth. He never went down to Westminster without being struck by the great opportunities that had been missed by previous Governments. The heterogeneous collection of buildings that had been allowed to remain on the south side of Parliament Street was a case in point. The ideal of the Victorian statesmen was good square box-like buildings, with windows and doors that shut properly, solid furniture and fireplaces ministered to by innumerable housemaids dragging coal scuttles up numerous flights of stairs. The attitude of politicians towards architecture was noteworthy. He had once heard a Whip, a mere Government Whip, who could not be expected to know anything about architecture—or anything else for that matter—say that he disliked a finial on a public building that was being erected, and that he had accordingly had it changed. The Home Office had never been completed. Some among the audience might not know that the original design included two towers on the Parliament Street front which would have cost £3,000, but they were never built because the Government of the day—probably Mr. Gladstone or some other renowned statesman—had declined to find the money. That was typical of the slipshod way in which Governments carried out their duty.

Sir Giles Gilbert Scott, in reply, said that he owed a great deal to the Club, which had done much to promote public interest in architecture. He believed that the opening of the Cathedral at Liverpool had received more notice and public recognition than the opening of any cathedral in the past, owing to the modern Press. The difficulty of the architect to-day was that he had to consider so many interests. He had to deal with public authorities, clients, building committees and others, all of whose views had to be reconciled with both practical

considerations and æsthetic aims. He had been singularly fortunate in that respect with his cathedral. The Building Committee had been most sympathetic and helpful, and for much of the co-operation in his endeavours he was indebted to the chairman, Sir Frederick Radcliffe, who was sitting beside him that evening. He might mention, in conclusion, one little incident that had happened to him when he was in the cathedral recently. He was approached by a lady seeking information which he endeavoured to supply, when she suddenly remarked that it was extraordinary that so big a thing could have come from so small a brain. " I felt duly chastened," added Sir Giles, amid laughter, " but thought it better to make my apologies and move away before I received any more confidences."

Mr. Norman Wilkinson, proposing the toast of " The Club," said that he was a representative of another Art —that of the Poster—which, like architecture, the public could not escape. The modern street poster, apart from railway posters, was not the work of the artist at all, but of the manufacturer, who too often thought he knew what he wanted without realising that it was not good or what the public necessarily liked. Many fine buildings were absolutely spoilt by the posters that were plastered on or beside them.

Mr. Charles Marriott, in reply, said allusion had been made to the greatly increased attention that was being given to architecture in the Press, and as a journalist who had to read a great many newspapers, he was constantly coming across articles and criticisms on buildings. From this he inferred that the Club was fulfilling one of its primary objects. J. H. E.-D.

PUBLIC LECTURES ON ARCHITECTURE AT GLASGOW.

Under the auspices of the Workers' Educational Association, the first course of lectures on architecture has recently been delivered in Glasgow University by permission of the University Court, the honorary lecturer being Professor Charles Gourlay, B.Sc., F.R.I.B.A., of the Royal Technical College, Glasgow. The lectures were four in number and their delivery took place on Saturday afternoons at three o'clock in the History Classroom. They were open free to the public and the large classroom was well filled at each lecture by an audience who showed great interest in the subjects dealt with, of which the following is a summary.

In his opening remarks at the first lecture Professor Gourlay stated that his aim would be to study the subject of architecture so as to develop appreciation of its beauty as regards mass, proportion and detail, also to stimulate interest in the art side of the worker's daily labour. He took " Greek Architecture " for his first lecture because it was the most refined style and the fundamental one for students to study. In it there were three definite Orders, or systems, of the enrichment of columns and their superstructures, which, in varied form, have remained in use until the present day. After a general description of the Acropolis of Athens, the professor gave detailed references to one Athenian example of each of the Greek Orders, the Parthenon being described as representing the Doric Order, the Erechtheion the Ionic, and the Choragic Monument of Lysicrates the Corinthian. In each case the design of the building was fully described and the suitability of the Order as expressing the purpose of the edifice was emphasised.

The second lecture was on " Byzantine Architecture," regarding which Professor Gourlay said that this style of architecture was best studied in its greatest monument—the Great Church of Santa Sophia, Constantinople, of which Chaucer wrote " so fair a church hath Venice none." Explaining its architectural development, the professor showed illustrations of plans and interiors of Roman, Early Christian, and previously erected Byzantine buildings, which enabled a true appreciation to be formed of the great advance made by the magnificently conceived plan of Santa Sophia, with its beautiful interior, upon those of any other buildings then existing. Because of its great size the church was known as " The Great Church," and it was erected for the Emperor Justinian by the architects Anthemius of Tralles and Isidorus of Miletus, between the years 532 and 537, when the Byzantine style was at its culmination ; hence its composition and details are of the choicest design and execution.

As an introduction to the third lecture, which was on " English Mediæval Architecture," Professor Gourlay showed the constructional basis of mediæval architecture, and concretely illustrated this by the study of doorways. Then the nomenclature of the periods of the style was explained and demonstrated by the study of windows with their tracery. Thereafter Durham Cathedral was described and illustrated in order to show the expression and progress of the style. In conclusion, the professor said that to attempt to unravel the architectural history of one of the many mediæval buildings in Britain was a most profitable educational incentive for anyone whose thoughts tended in that direction, because of the excellent insight into the principles and practice of mediæval architecture thereby obtainable.

The last lecture of the series was on " The Roman and Italian Orders of Architecture," in which Professor Gourlay developed his subject in the same interesting manner likely to be comprehensible and attractive to a lay audience as in his previous lectures.

THE A.A. PLAY.

" GUFFAWS ; OR, THE DOUBLE ELEPHANT AND CASTLE."

The A.A. has a tradition behind their plays extending, I believe, for some 40–50 years. They do not appear every year but crop up at intervals, and when they do crop up they indicate some unusual activity amongst the ranks of the coming generation of architects.

In other words, they are a healthy sign of progress and thought amongst the younger members of the profession.

In living memory—and this phrase makes one appear very old—there was a brilliant series when Clapham, Carvill and Passmore were the noted figures of the stage. Later, after an interval of a few years, the Purple Patch produced a short series of three plays with Clapham, Carvill, Wontner Smith and J. B. Scott as the principal actors, and now, after the war's interval, the present students of the A.A. have for the last two or three years

revived the good work and introduced to us new plays and new actors.

These plays act as an index of the thoughts of the student, and I noticed that many members of the Board of Architectural Education attended the most recent one—very properly, too; it is impossible to educate without an insight into the desires of those who are being educated.

Now this year there was a delightful scene of successive first and fifth year students whose enthusiasm began full tilt at year one and fizzled out in empty drawing boards at year five. Is that a portent? Another, where the charwoman at the British Museum—for reasons of economy there is only one—sought a safe shelter for a snooze in an empty tomb and to secure a little air left the lid propped open with her dust-pan until she was rescued by the ghosts of the past. Another, where Commodity came up against some of the problems of our Art in a peculiarly well-staged, well-acted and well-dressed scene; and yet another where a guide gulled the Americans properly. All of these show the trend of thought into the realms of fancy. Who shall say if this is right or wrong?—but may they get there safely.

Imagination combined with knowledge is a rare combination and in so far as these plays show the conception of this ideal they are on sure ground, but it seemed to me that the scenes which dealt with ordinary everyday affairs such as domestic quarrels and pirates, with their inevitable accompaniment of policemen and pistols, fell very far short of the others. The obvious comparison between the professional and the amateur is conjured up to the detriment of the amateur.

But with that one little criticism I can thoroughly endorse the verdict of the audience that this year's A.A. play was one of the best of the series and foreshadows brilliant ones to come.

M. E. W.

ARCHITECTS' BENEVOLENT SOCIETY.

Scheme of Insurance.

In view of the interest shown by architects in the Scheme of Insurance, the Council of the Architects' Benevolent Society have recently secured the help of an advisory committee of insurance experts.

The Architects' Benevolent Society is now in a position to answer enquiries on every class of insurance business, whether concerning existing or contemplated policies, and is ready to give considered advice on all such questions.

Notes from the Minutes of the Council Meeting

15 *December* 1924.

The Tribunal of Appeal under the London Building Acts.

Sir Banister Fletcher was appointed as the architect-member of the Tribunal of Appeal in the place of the late Mr. John Slater.

Architecture and Craftsmanship.

On the recommendation of the Art Standing Committee, it was decided to arrange an evening lecture during the session of 1925-26 on the subject of "The Co-operation of the Architect and Craftsman," and to arrange a series of popular afternoon lectures in the spring of 1925 on various crafts.

The Gold Medal of the American Institute of Architects.

The congratulations of the Council were transmitted to Sir Edwin Lutyens, R.A., on the occasion of the award to him of the Gold Medal of the American Institute of Architects.

The Presidency of the Royal Academy.

A message of appreciation was sent to Sir Aston Webb on the occasion of his retirement from the Presidency of the Royal Academy, and a message of congratulation was sent to Mr. Frank Dicksee, R.A. (*Hon. Associate*), on his election as President.

The Royal Sanitary Institute Congress, 1925.

Mr. J. Inch Morrison was appointed as the delegate of the R.I.B.A. at the Congress to be held in Edinburgh in July 1925.

Decimal Coinage and Metric Measures.

On the recommendation of the Science Standing Committee, it was decided to urge H.M. Government to appoint a Committee to examine and report upon the possibility of a further introduction of the decimal system of coinage and a metric system of measures in this country.

Examination Fees.

On the recommendation of the Board of Architectural Education, it was decided that students of recognised schools exempted from the Final Examination who attain to candidature for the Associateship and who pay examination fees in their schools shall in future pay fees to the R.I.B.A. totalling £10 10s. instead of £15 15s.

Nominations for Membership.

Three candidates for the Fellowship and nine candidates for the Associateship were nominated for election on 5 January 1925.

THE TRIPLE SCREEN AT HYDE PARK CORNER.

University College,
Cathays Park, Cardiff.
9 *December* 1924.

Sir,—I am writing a monograph on the Scottish sculptor John Henning (1771–1851), and his sons. I should be very grateful to any of your readers who would tell me who designed and executed the frieze of classical figures on the triple screen of the gate at Hyde Park Corner. The frieze is variously attributed to John Henning, senior, to his son John, and to his son Archibald. I should like to be told the real facts, or to be told where I am most likely to find them.

Yours faithfully,

Cyril Brett.

Notices

THE SIXTH GENERAL MEETING.

The Sixth General Meeting (Ordinary) of the Session 1924–25 will be held on Monday, 19 January 1925, at 8 p.m., for the following purposes :—

To read the Minutes of the General Meeting (Business) held on 5 January 1925 ; formally to admit members attending for the first time since their election.

To read the following Paper :—" Applications in Building and Foundations of Modern Engineering Construction," by Oscar Faber, O.B.E., D.Sc.

To read the Council's Deed of Award of Prizes and Studentships, 1925.

SESSIONAL PAPERS.

In the Sessional Programme of the R.I.B.A. a lecture on " Sculpture in relation to Architecture," on 16 February, by Mr. D. S. MacColl had been arranged. Unfortunately Mr. MacColl's health has made it necessary for him to abandon the lecture. Arrangements will be made as soon as possible for the reading of another paper.

ELECTION OF MEMBERS.

2 MARCH 1925.

The following applications for election have been received. Notice of any objection or other communication respecting the candidates must be sent to the Secretary for submission to the Council prior to Monday, 2 February 1925.

AS FELLOWS (6).

BARKER : RAYMOND TURNER [*A.* 1899], 11 Buckingham Street, Strand, W.C. ; New Place, Welwyn, Herts.

BESWICK : WILLIAM [*A.* 1911], 19 Newgate Street, Chester ; 17 Eaton Road, Chester.

DANNATT : PERCY BOOTHROYD, F.S.I. [*A.* 1903], 18 Nelson Street, Greenwich, S.E.10 ; 47 Westcombe Park Road, Blackheath, S.E.3.

PARKIN : WILLIAM GORDON [*A.* 1918], Consular Road, Tientsin, China ; 125 Meadows Road, Tientsin, China.

SLATER : JOHN ALAN, M.A.Cantab. [*A.* 1911], 46 Berners Street, W.1 ; 8 Wellgarth Road, N.W.11.

WILSON : JOHN GODDARD [*A.* 1923], Public Works Department, Union Buildings, Pretoria, South Africa.

AS ASSOCIATES (15).

BARNSLEY : GEOFFREY REYNOLDS [*Final Examination*], 3 Paper Buildings, Temple, E.C.4.

BEST : MAJOR HALSTEAD, R.E. (ret.), F.S.I. [*Special Examination*], St. John's Chambers, Church Street, Blackpool.

CUMMINGS : CLIFFORD LANE [*Special War Examination*], St. Leonard's Avenue, St. Kilda, Melbourne, Australia.

ELIJAH : SAMSON ABRAHAM [*Final Examination*], c/o Messrs. Thos. Cook & Son, Hornby Road, Bombay, India.

ENTHOVEN : RODERICK EUSTACE [*Passed five years' course at Architectural Association—Exempted from Final Examination after passing Examination in Professional Practice*], 3 Cleveland Gardens, Lancaster Gate, W.2.

FAIRHURST : PHILIP GARLAND [*Passed five years' course at Manchester University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice*], Ellesmere, Macclesfield Road, Wilmslow, Cheshire.

HINES : EDWARD GEORGE [*Final Examination*], Stockwood Crescent, Luton, Beds.

LANGCAKE : WILFRED [*Special Examination*], 109 Grove Lane, Denmark Hill, S.E.5.

MASON : HILDA FRANCES [*Final Examination*], Northcliffe, Felixstowe.

MILLER : JOSEPH HAYDN, B.Arch.Liverpool [*Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice*], 604 Rose Hill, Pemberton, Wigan.

MILLS : JOHN CHECKLEY ROBINSON [*Special War Examination*], 38 Martin Place, Sydney, N.S.W.

PAKINGTON : HONBLE. HUMPHREY ARTHUR [*Passed five years' course at Architectural Association—Exempted from Final Examination after passing Examination in Professional Practice*], 9 Arundel Gardens, W.11.

PHILLIPS : LIONEL BLYTHEWOOD [*Special War Examination*], 6 Wyatt Avenue, Burwood, Sydney, N.S.W.

STEELE : HAROLD ROOKSBY [*Final Examination*], 87 Victoria Street, Westminster, S.W.1.

TOWNSEND : JOYCE ELEANOR [*Passed five years' course at Architectural Association—Exempted from Final Examination after passing Examination in Profession Practice*], 9 Gray's Inn Square, Gray's Inn, W.C.1.

AS HON. ASSOCIATE (1).

STEGGALL : JOHN EDWARD ALOYSIUS, M.A.Cantab, F.R.S.E., Professor of Mathematics in the University of St. Andrews, at University College, Dundee ; Woodend, Perth Road, Dundee.

LONDON TRAFFIC AND THAMES BRIDGES.

Mr. W. R. Davidge is reading a paper before the Town Planning Institute on Friday, 16 January, at 6 p.m. on the subject of " London Traffic and Thames Bridges."

The discussion will be opened by Sir Lynden Macassey.

The meeting will be held at the Institution of Mechanical Engineers, Storey's Gate, Westminster. Members and licentiates of the R.I.B.A. are invited to attend.

BOARD OF ARCHITECTURAL EDUCATION.

R.I.B.A. EXAMINATIONS.

NOVEMBER AND DECEMBER 1924.

The questions set at the Intermediate and Final (or Special) Examinations held in November and December 1924 have been published and are on sale at the Royal Institute, price 1s. 6d. (exclusive of postage).

LOAN LIBRARY CATALOGUE.

A new catalogue, brought up to date, of the Loan Library has recently been compiled, and can be now obtained on application at the R.I.B.A., price 1s. 6d., postage 3d. extra.

THE LIGHTING OF PICTURE GALLERIES AND MUSEUMS.

A few more copies of Mr. Hurst Seager's paper on " The Lighting of Picture Galleries and Museums," reprinted from the R.I.B.A. JOURNAL, Vol. XXX, No. 5, 1923, have become available and can be obtained on application to the Secretary R.I.B.A., price 1s. 6d. per copy.

ERRATA.

In the JOURNAL of 22 November, it was stated that a renewal of the (Archibald Dawnay) Scholarship of £25 had been granted to Mr. A. C. Cameron. This should have been Mr. A. E. Cameron.

The Examinations

INTERMEDIATE.

The Intermediate Examination, qualifying for registration as Student R.I.B.A., was held in London from 21 to 27 November, and in Leeds from 21 to 26 November. Of the 58 candidates who presented themselves, 18 passed and 40 were relegated. The successful candidates were as follows, the names being given in order of merit as placed by the Examiners :—

HUME : BERTRAM STUART [*P.* 1924], 24, Upper Gloucester Place, Dorset Square, W.

BOURNE : JOHN HENRY [*P.* 1924], 24, Cotham Road, Cotham, Bristol.

PRICE : ARTHUR JOHN [*P.* 1924], The Firs, Meaford, Stone, N. Staffs.

SUTCLIFFE : GORDON [*P.* 1923], 60, Dallas Road, Lancaster.

RABY : LAURENCE [*P.* 1922], 3, Hunter Street, Brierfield, Lancs.

BUNCE : GERALD EDGAR [*P.* 1924], 76, Howard Road, Westbury Park, Bristol.

LINFORD : ALBERT LOUIS [*P.* 1924], " Kelvestone," Cannock, Staffs.

MOORE : SHIRLEY SIMPSON [*P.* 1922], 20, West Avenue, Leicester.

SAVAGE : HERBERT [*P.* 1923], 4. Westminster Road, Liscard, Wallasey, Cheshire.

FRASER : JAMES MILNER [*P.* 1924], 73, Western Road, Woodside, Aberdeen.

DOW : WILLIAM ERIC [*P.* 1913], 21, Viewforth Terrace, Edinburgh.

ABRAMS : EDWARD DE LA TOUR [*P.* 1922], " Hutton Mount," Limpsfield, Surrey.

DOWN : ALBERT HENRY [*P.* 1919], " Cranmere," Denmark Road, Exeter.

DUNCAN : DOUGLAS GRIEVE [*P.* 1923], The Cottage, Scotland Road, Carlisle.

GRADDON : REUBEN HAROLD [*P.* 1921], 71, Virginia Street, Southport.

PEGG : ALFRED LLOYD FRANK [*P.* 1921], Stanley Road, Kenrick Road, Mapperley, Nottingham.

RULE : WILLIAM CECIL [*P.* 1922], 69, Knatchbull Road, Camberwell, S.E.

TITLEY : PERCIVAL EDWARD [*P.* 1921], 23, Clarence Street, Warrington.

THE FINAL AND SPECIAL.

The Final and Special Examinations, qualifying for candidature as Associate R.I.B.A., were held in London from 4 to 11 December. Of the 37 candidates admitted (two of whom took Part II only), 8 passed and the remaining 29 were relegated. The successful candidates were as follows :—

BARNSLEY : GEOFFREY REYNOLDS [*S.* 1922], 3, Paper Buildings, Temple, E.C.4.

BEST : HALSTEAD [*Special*], 46, Reads Avenue, Blackpool.

ELIJAH : SAMSON ABRAHAM [*S.* 1922], 3, Hungerford Road, N.7.

HINES : EDWARD GEORGE [*S.* 1920], Stockwood Crescent, Luton.

HOLLINSHED : CHARLES NEVILLE [*Special*], Cowley House, Cowley, via Uxbridge.

LANGCAKE : WILFRED [*Special*], 109, Grove Lane, Denmark Hill, S.E.5.

MASON : HILDA FRANCES [*S.* 1923], Northcliffe, Felixstowe.

STEELE : HAROLD ROOKSBY [*S.* 1921], 87, Victoria Street, Westminster, S.W.1.

EXAMINATION IN PROFESSIONAL PRACTICE FOR STUDENTS OF RECOGNISED SCHOOLS EXEMPTED FROM THE FINAL EXAMINATION.

The following candidates passed this examination, which was held on 9 and 11 December : —

ASHBURNER : EDWARD HEATHCOTT (Liverpool University).
FAIRHURST : PHILIP GARLAND (Manchester University).
VELARDE : FRANCIS XAVIER, (Liverpool University).

FINAL EXAMINATIONS.

ALTERNATIVE PROBLEMS IN DESIGN.

Instructions to Candidates.

1. The drawings, which should preferably be on uniform sheets of paper of not less than Imperial size, must be sent to the Secretary of the Board of Architectural Education, Royal Institute of British Architects, 9 Conduit Street, W., on or before the dates specified below.

2. Each set of drawings must be signed by the author, AND HIS FULL NAME AND ADDRESS, and the name of the school, if any, in which the drawings have been prepared, must be attached thereto.

3. All designs, whether done in a school or not, must be accompanied by a declaration from the student that the design is his own work and that the drawings have been wholly executed by him. In the preparation of the design the student may profit by advice.

4. Drawings for subjects (*a*) are to have the shadows projected at an angle of 45° in line, monochrome, or colour. Drawings in subjects (*b*) are to be finished as working drawings. Lettering on all drawings must be of a clear, scholarly, and unaffected character.

LXXIX

(*a*). *A Gateway and Screen.* A quadrangle has buildings on three sides, and these are of fine architectural character, the style assumed being left to the students. The wings of the buildings are 120 feet apart, and are to be connected by some form of screen which should not entirely obstruct the view of the quadrangle.

A design is required for the screen which should have a central feature consisting of an entrance gateway or gateways allowing access for carriages and pedestrians. No accommodation for a gate-keeper is required. The gateway and screen are to be erected as a memorial.

Drawings required :—

Plan from wing to wing to $\frac{1}{8}$-inch scale.
Elevation with wing blocks indicated to $\frac{1}{8}$-inch scale.
Cross section through the central feature to $\frac{1}{8}$-inch scale.
$\frac{1}{2}$-inch detail of some portion of the central feature.

(*b*). Working drawings for subject No. LXXVII (*a*), *A Boys' Club*. The design for the Boys' Club may, after it has been approved, be re-submitted with the addition of one complete section through the whole building passing through the staircase and a complete $\frac{1}{2}$-inch detail of the portion of the front where the section is cut.

LXXX

(*a*). A design for a *Doctor's House in a country town* on a corner site 60 feet by 120 feet at the junction of two main roads.

Accommodation required :

Entrance hall.
Cloak room.
Drawing room.
Dining room.
Kitchen and usual offices.

Patients' entrance.
Waiting room.
Consulting room.
Small dispensary.
Lavatory accommodation.

Five or six principal bedrooms, including Day and Night Nurseries.
Two maids' rooms.
Bathrooms, etc.

Garage for one car, which should not be too near the house.

Drawings required :—
Plans of each floor, to $\frac{1}{8}$-inch scale.
Two elevations, to $\frac{1}{8}$-inch scale.
Two sections, to $\frac{1}{8}$-inch scale.

The lay-out of the garden is not required, but the north point must be indicated.

(*b*). Working drawings for Subject No. LXXVIII (*a*), *A Small Shop*.

The design for a Small Shop may, after it has been approved, be re-submitted with the addition of :
$\frac{1}{2}$-inch elevation of part of the front.
$\frac{1}{2}$-inch section through the front wall, which should include a portion of the roof.
Explanatory plans of different levels.

LXXXI

(*a*). A design for an *Airway Customs House*. This building is to be erected in a large aerodrome adjoining the landing ground.

The accommodation generally should consist of :—
An ample vestibule, open or closed.
Two customs rooms for the examination of baggage, one for arrivals, and one for departures, about 600 square feet each.
In addition, one or two small offices for the customs officials, toilet accommodation for men and women passengers, small separate waiting room for ladies.
Buffet.
Waiting hall about 1,000 square feet.
Small service kitchen.
Store rooms.
Staff lavatories.

Drawings required :—
One plan to $\frac{1}{8}$-inch scale.
Two elevations to $\frac{1}{8}$-inch scale.
Two sections to $\frac{1}{8}$-inch scale.

(*b*). Working drawings for Subject No. LXXIX (*a*), *A Gateway and Screen*.

The design for a Gateway and Screen may, after it has been approved, be re-submitted with the addition of :—
$\frac{1}{2}$-inch elevation, section and plan of the whole or a part of the central feature, all sufficient to show the construction.

LXXXII

(*a*). A design for a *Riverside Bathing Establishment*, which it is proposed to erect on a level site on the bank of a river in wooded country on the outskirts of a country town.

It is approached by a public road which is parallel to the river and 50 feet from it.

It is proposed to deepen the river at the point where the establishment is situated and to form an embankment which is 4 feet above the average height of the river.

Steps and diving boards should be included in the scheme.

Accommodation required :—
Entrance hall with pay-box and attendants' office.
Store for deposit of valuable articles.
Towel and costume store.
30 dressing boxes for each sex.
4 shower baths for each sex.
Lavatory accommodation for each sex.
Above the hall and dressing boxes there is to be a terrace for tea, part of which is to be permanently covered, accessible both for bathers and for the public. Convenient kitchen and services are required for the preparation of refreshments.

Drawings required :—
Plan to $\frac{1}{16}$-inch scale.
Two cross sections to $\frac{1}{16}$-inch scale.
Two elevations to $\frac{1}{16}$-inch scale.
$\frac{1}{2}$-inch detail of central portion.

(*b*). Working drawings for Subject No. LXXX (*a*), *A Doctor's House in a country town*.

The design for a Doctor's House may, after it has been approved, be re-submitted with the addition of :
$\frac{1}{2}$-inch section through the principal staircase.
$\frac{1}{2}$-inch part of front elevation to show window and door.

LXXXIII

(*a*). A design for a *Private Chapel*. On the edge of a lofty terrace from which the ground slopes steeply down to gardens at a lower level it is proposed to erect a Private Chapel. The Chapel is connected with a large house by a covered way, but an additional entrance should also be provided. The congregation would not usually exceed 50. An organ, font and small vestry should be provided.

Drawings required :—
$\frac{1}{16}$-inch scale small block plan showing the relation between the Chapel and the house, covered way and terrace.
$\frac{1}{8}$-inch scale plan of the Chapel and of a portion of the covered way.
Two elevations to $\frac{1}{8}$-inch scale. One of the elevations should show the side towards the terrace.
Two sections to $\frac{1}{8}$-inch scale.
$\frac{1}{2}$-inch detail of one of the entrance doorways.

(*b*). Working drawings for Subject No. LXXXI (*a*), *An Airway Customs House*.

The design for an Airway Customs House may, after it has been approved, be re-submitted with the addition of :—
Half-inch scale elevation, section and plan of part of the building, all sufficient to show the construction.

LXXXIV

(*a*). A small industrial firm wishes to erect a *Garage* adjoining the factory and facing the main road. The site is 100 feet road frontage and 60 feet in depth.

Accommodation required :—
Ground floor : garage room for 5 lorries and 2 private cars.
Work-room.
Store.
Lavatory accommodation.
A portion of the site should be arranged to provide washing space.
The part reserved for lorries should be top-lighted as far as possible.
First floor : Two chauffeurs' flats entered separately from the street.

Drawings required :—
Two plans to $\frac{1}{8}$-inch scale.
Two sections to $\frac{1}{8}$-inch scale.
Front elevation to $\frac{1}{8}$-inch scale.

(*b*). Working drawings for Subject No. LXXXII (*a*), *A Riverside Bathing Establishment*.

The design for a Riverside Bathing Establishment may, after it has been approved, be re-submitted with the addition of :—
$\frac{1}{2}$-inch detail of a portion of the exterior towards the river.
$\frac{1}{2}$-inch cross section through the centre, sufficient to show the materials and treatment.

Dates for Submission of Designs in 1925.

Subj. LXXIX.	28 Feb.	Subj. LXXX	30 Apr.
,, LXXXI.	30 June	,, LXXXII.	31 Aug.
,, LXXXIII.	31 Oct.	,, LXXXIV.	31 Dec.

Competitions

ROYAL SOCIETY OF ARTS.

Memorial Library for a College Competition.

In order to encourage the study of designs for industrial purposes the second series of open competitions organised by the Royal Society of Arts will include a competition for a Memorial Library for a College suitable for housing a small but rare collection of books.

The conditions are as follows :

A Travelling Scholarship of the value of £150 for one year will be offered on the following conditions :

Candidates must not be over 35 years of age. They must be prepared to travel in France, Italy, Spain or Flanders for six months, which, however, may be broken up into periods of, say, three or two consecutive months.

Subject of Competition.

The subject is a Memorial Library for a College, suitable for housing a small but rare collection of books.

The superficial area of the room is not to exceed 1,500 feet. The method of arranging the bookcases and displaying a few *objets d'art* is left to the competitor. Cost is not a primary consideration, and the use of expensive woods, as well as inlays of ivory, ebony or metal, in addition to marble, can be considered.

In a suitable place a commemorative panel or some other *motif* should remind the visitor of the origin of the Library. The scheme of the ceiling, which can be treated as a space for decorative painting, as well as the pattern of the floor, must harmonise with the whole design.

A preliminary competition of twelve hours will be held in London and other centres in April 1925. Candidates must give notice of their intention to compete to the Secretary of the Royal Society of Arts, not later than 14 March. For this competition the following drawings will be necessary :

A plan of the floor, one section, and a plan of the ceiling, all to the scale of a quarter of an inch to a foot.

For the final competition two months will be allowed to the competitors, selected after the first competition. The finished drawings are to include the following :

Plans of floor and ceiling and two sections to a scale of half an inch to a foot, a detail drawing of the fireplace or some other feature, showing the complete height and treatment of the room from floor to ceiling.

Competitors should bear in mind that electric lighting and central heating are to be considered.

The competition will take place in June 1925.

LEAGUE OF NATIONS.

Competition for the Selection of a Plan with a View to the Construction of a Conference Hall for the League of Nations at Geneva.

The League of Nations will shortly hold a competition for the selection of a plan with a view to the construction of a Conference Hall at Geneva. The competition will be open to architects who are nationals of States Members of the League of Nations.

An International Jury consisting of well-known architects will examine the plans submitted and decide their order of merit.

A sum of 100,000 Swiss francs will be placed at the disposal of the Jury to be divided among the architects submitting the best plans.

A programme of the competition will be ready in February, 1925, and will be despatched from Geneva so that Governments and competitors may receive copies at approximately the same date. Copies for distant countries will therefore be despatched first.

The British Government will receive a certain number of free copies. These will be deposited at the Royal Institute of British Architects, and application should be made to the Secretary, R.I.B.A., 9, Conduit Street, W.1, by intending competitors.

Single copies can be procured direct from The Secretary-General of the League of Nations at Geneva, for the sum of 20 Swiss francs, payable in advance, but will not be forwarded until after the Government copies have been despatched.

On the nomination of the President of the Royal Institute, Sir John Burnet, A.R.A., has been appointed as the British representative on the Jury of assessors.

UGANDA RAILWAY NEW OFFICE, NAIROBI.

Apply to the Crown Agents for the Colonies, 4 Millbank, Westminster, S.W.1. Closing date for receiving designs, 28 February 1925. Assessor : Mr. William Dunn, F.R.I.B.A. Deposit £1 1s.

" Reference New Railway Offices. Many requests received from competitors for extension of competition. Agree to one month extension. Please advertise this. Lists of questions and answers being sent by first mail for distribution."

THE NEW INSTITUTE FOR THE BLIND, BUENOS AIRES, ARGENTINE REPUBLIC.

An International Competition has been promoted for the Argentine Institution for the Blind, Buenos Aires, Argentine Republic.

A small number of copies of the Conditions have been deposited in the R.I.B.A. Library for the information of British Architects who may desire to compete.

MOLD HOUSING SCHEME.

Members and Licentiates of the Royal Institute of British Architects must not take part in the above competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

MASONIC MEMORIAL COMPETITION.

Apply to The Grand Secretary, Freemasons' Hall, Great Queen Street, W.C.2. Last day for applying for conditions, 23 August 1924. Deposit, £1 1s. Closing date for receiving designs, 1 May 1925. Assessors : Sir Edwin Lutyens, R.A. [*F.*] (appointed by the President); Mr. Walter Cave [*F.*], Mr. A. Burnett Brown, F.S.I.

MANCHESTER ART GALLERY.

Apply to the Town Clerk, Town Hall, Manchester. Closing date for receiving designs, 28 February 1925. Assessors : Professor C. H. Reilly, O.B.E. [*F.*], Mr. Percy S. Worthington, Litt.D., F.S.A. [*F.*].

BRANCH PUBLIC LIBRARY, HAREHILLS, LEEDS.

Assessor, Mr. Percy S. Worthington, M.A., Litt.D., F.R.I.B.A. Last day, 16 February 1925. Apply to :— Thos. Thornton, Town Hall, Leeds.

BETHUNE MEMORIAL TO THE MISSING.

The Imperial War Graves Commission desire Members and Licentiates of the Royal Institute to be reminded that applications to take part in the above Competition from persons other than those who had signified their intention of competing on or before 1 January 1924 cannot be considered. Due notice of this regulation was published in the Professional Press on various occasions during August and September, 1923.

Members' Column

FORMATION OF PARTNERSHIP.

GEORGE HOLLINS, A.R.I.B.A., M.S.A., architect and surveyor, Lloyd's Bank Chambers, Newcastle, has taken into partnership Reginald Lucas Jones, and the title of the firm will now be George Hollins, A.R.I.B.A., M.S.A., and Reginald Lucas Jones, architects and surveyors, Lloyd's Bank Chambers, Newcastle, Staffs.

PARTNERSHIP WANTED.

A.R.I.B.A., F.S.I., good all round, 20 years' private practice, owing to present depression requires partnership or some form of collaboration producing about £300 a year. Capital; subject to investigation.—Apply Box 122, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

APPOINTMENTS VACANT.

VACANCIES exist for Architectural Assistants in the Public Works Department, Government of Hong Kong. Three years' agreement. Salary, £460 to £500, with further annual increments to a maximum of £1,000, subject to efficiency. Candidates should be Associates R.I.B.A., unmarried, age 24-32, experienced in design, working drawings, details, specifications and some knowledge of quantities. Experience in steel-framed buildings and reinforced concrete desirable. Further particulars and application forms can be obtained on application to the Crown Agent's Office, 4 Millbank, London, S.W.

APPOINTMENT WANTED.

STUDENT R.I.B.A. desires post in London. Age 23. Articled 1919-1923 in office where the following work was carried out: Hospitals (2), additions to public schools, convalescent home, public library, many banks, church and much good domestic work. —Apply Box 1125, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.1.

"COUNTRY LIFE" COMPETITION.

"COUNTRY LIFE" Competition. Licentiate with great experience of black and white illustration offers his services in the preparation of perspectives for the above. Has visited site and has all particulars.—Box 6124, Secretary R.I.B.A., 9, Conduit Street, W.1.

CHANGE OF ADDRESS

MR. GEORGE P. ALLEN [F.R.I.B.A.] has removed his Offices from 79 High Street, Bedford to No. 81 High Street, Bedford. Telephone number as before No. 347.

OFFICE BOY RECOMMENDED.

A MEMBER recommends a youth as office boy. Good references.—Apply to the Secretary R.I.B.A., 9 Conduit Street, London, W.1.

WILL man or woman of simple tastes, perhaps lover of books and garden, join architect and wife in small country house. Baker Street 25 mins. Quiet and privacy. Intelligent cooking. Reasonable expenses.—Box 1441, c/o Secretary R.I.B.A., 9 Conduit Street, W.

Minutes V

SESSION 1924–25.

At the Fifth General Meeting (Business) of the Session 1924–1925, held on Monday, 5 January, 1925, at 8 p.m., Mr. J. Alfred Gotch, F.S.A., President, in the Chair.

The attendance book was signed by 6 Fellows (including 4 Members of the Council) and 5 Associates (including 1 Member of the Council).

The Minutes of the Meeting held on 15 December 1924 having been taken as read were confirmed and signed by the Chairman.

The Hon. Secretary announced the decease of :—

Mr. Paul Waterhouse, F.S.A., Past-President,
Sir William Emerson, Past-President,

and it was RESOLVED that the regrets of the Royal Institute for the loss of these members be recorded in the Minutes.

The following members attending for the first time since their election were formally admitted by the Chairman :—

Mr. C. H. Brightiff [*A.*] and
Mr. R. J. Troup [*A.*].

The following candidates for membership were elected by a show of hands :—

AS FELLOWS (3).

LAY : CECIL HOWARD [*A.* 1912].
LOWRY : ROBERT [*A.* 1916], Denham, Bucks.
WRATTEN : EDMUND LIVINGSTONE [*A.* 1902].

AS ASSOCIATES (9).

DAWSON : JAMES STOTT [Passed six years' course at Robert Gordon's Colleges, Aberdeen—Exempted from Final Examination after passing Examination in Professional Practice], Aberdeen.

DONALDSON : ROBERT WEIR, B.Arch. Liverpool [Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice], Bootle, Liverpool.

HISCOCK : LESLIE ROBERT [Passed five years' course at Architectural Association—Exempted from Final Examination after passing Examination in Professional Practice].

NORBURY : WILLIAM ALAN, B.A. [Passed five years' course at Manchester University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice], Hale, Cheshire.

OWEN : WILFRED HERBERT [Passed five years' course at Manchester University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice], Manchester.

SHANKS : GEORGE FERGUSON [Passed five years' course at Glasgow School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice], Glasgow.

SILCOCK : HUBERT SPENCER, B.Arch. Liverpool [Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice], Warrington.

TURNER : RALPH HENRY, B.Arch. Liverpool [Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice], Bridport, Dorset.

WILLIS : REGINALD JOHN, M.A. [Passed five years' course at Manchester University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice], Manchester.

The President called the attention of the meeting to the very interesting collection of photographs of Trondhjem Cathedral kindly presented to the Royal Institute by Professor Olaf Nordhagen, Honorary Corresponding Member, also to a further collection of Etchings of New York buildings kindly presented by Mr. Joseph Pennell, Honorary Associate, and on the motion of the President it was RESOLVED that a very hearty vote of thanks be passed to these Honorary Members for their most interesting gifts.

The Meeting closed at 8.15 p.m

Arrangements have been made for the supply of the R.I.B.A. JOURNAL (post free) to members of the Allied Societies who are not members of the R.I.B.A. at a specially reduced subscription of 12*s.* a year. Those who wish to take advantage of this arrangement are requested to send their names to the Secretary of the R.I.B.A., 9 Conduit Street, W.1.

Members sending remittances by postal order for subscriptions or Institute publications are warned of the necessity of complying with Post Office Regulations with regard to this method of payment. Postal orders should be made payable to the Secretary R.I.B.A., and crossed.

R.I.B.A. JOURNAL.

Dates of Publication.—1924: 8th, 22nd November; 6th, 20th December. 1925: 10th, 24th January; 7th, 21st February; 7th, 21st March; 4th, 25th April; 9th, 23rd May; 13th, 27th June; 18th July; 15th August; 19th September; 17th October.

FIG. 4. THE BUND, SHANGHAI

Applications in Building and Foundations of Modern Engineering Construction

BY OSCAR FABER, O.B.E., D.Sc., M.INST.C.E., HON. A.R.I.B.A.

[*Read before the Royal Institute of British Architects on Monday, 19 January 1925*]

PART I.—THEORY.

SOILS in nature which we sometimes have to found on or retain may be said to lie somewhere between the following four extreme cases :—

(*a*) Those possessing neither cohesion nor friction.

(*b*) Those possessing friction but no cohesion.

(*c*) Those possessing cohesion but no friction.

(*d*) Those possessing cohesion and friction.

The first of these (*a*) *are liquids.*—For stability of a foundation for vertical loads, the depth of the foundation below the free surface must be

$$h=\frac{p}{w} \quad . \quad . \quad . \quad . \quad . \quad (1)$$

Where h= depth of foundation below free surface in feet, p=pressure on foundation in lbs. per square foot, w=weight of soil *above* foundation in lbs. per cubic foot. In other words, the pressure on the foundation must equal the pressure in the soil at this depth due to the weight of earth above it.

$$p=wh \quad . \quad . \quad . \quad . \quad . \quad (2)$$

This pressure will be referred to as the hydrostatic pressure of the soil at this depth. Values are given in Table I.

TABLE I.

Hydrostatic pressure at various depths in soil weighing 120 lbs. per cubic ft.

$p=wh$

Depth in feet.	Pressure in Lbs. per sq. ft.	Pressure in Tons per sq. ft.
0	0	0
5	600	·27
10	1,200	·54
15	1,800	·80
20	2,400	1·07
25	3,000	1·34
30	3,600	1·61
35	4,200	1·88
40	4,800	2·15

If the foundation is at a less depth than given by 1 then the foundation will sink, and if it is at a greater depth it will rise. It must be exactly at that depth, neither more nor less, and is exactly in the condition of a ship which rises and falls in its foundation according as the load in it increases or decreases.

It may be considered a stretch of imagination to consider a pure liquid as the limiting condition of a soil, but the properties of a liquid are approximated to by soft mud which is sometimes found on the banks of rivers which have passed through clay deposits. The Thames is a notable case in

point, and the mud on many of the marshes between Greenhithe and Sittingbourne approximates closely to this condition below the top surface, sometimes for a depth of 25 feet or so.

Pressures against retaining walls built in front of this material approximate closely to the pressures which would exist if these walls were retaining liquid, and embankments built on these marshes have to be given an extremely flat slope if they are to be free from risk of failure and even then they settle continuously. The river wall along these marshes is constantly settling and men are constantly employed in raising it.

The second of these (*b*), those possessing friction but no cohesion, were considered in great detail by Rankine. These conditions are practically fulfilled in the case of loose dry sand which is a perfectly reliable foundation in spite of Biblical suggestion to the contrary provided it is free from risk of erosion or having its conditions disturbed in other ways, and providing the depth of the foundation is arranged at a proper level.

Rankine showed that for stability the depth of the foundation below the free surface must be

$$h=\frac{p}{w}\left(\frac{1-\sin\theta}{1+\sin\theta}\right)^2 \quad . \quad . \quad . \quad . \quad (3)$$

where h, p and w have the same significance as before.

θ is suggested by Rankine to be the angle of repose of the material, that is to say the greatest slope to the horizontal at which the material will stand. Subsequent experiments have shown, however, that the pressures calculated from this formula agree much better with experience if θ is taken as the angle whose tangent gives the co-efficient of friction of the material, that is the relation between the force required to produce lateral motion across a horizontal section of the material, to the vertical force across that section. The formula in (3) gives the least depth at which such a foundation is stable, and if a foundation is placed at a higher level it will sink down to this depth. Any depth below this level will also be a stable foundation until the maximum permissible depth is reached, when h has the value in equation 4,

$$h=\frac{p}{w}\left(\frac{1+\sin\theta}{1-\sin\theta}\right)^2 \quad . \quad . \quad (4)$$

and if this is exceeded the foundation would then tend to rise as the upward pressure would be greater than the downward weight.

As compared with a liquid, the permissible depth instead of having the definite figure of

$$h=\frac{p}{w}$$

may now lie anywhere within a certain range, partly above this depth and partly below it, and in proportion as the depth differs from

$$h=\frac{p}{w}$$

we rely upon the friction of the material to secure stability. Rankine understood quite well that these formulæ were only properly applicable to soils which approximated to his assumptions that there should be no cohesion, and that the particles were prevented from moving only by friction. Nevertheless his formulæ have since that date been somewhat indiscriminately applied to soils which do not approximate to these assumptions, such for example as clay.

Clay is a material with a quite definite and considerable cohesion, as is quite clear to a navvy attempting to cut it with a spade, who has to exert considerable force in shearing through the material.

It is clear from an examination of formula 3 that a soil of this character will carry no load if placed on the surface, because if h is 0 clearly p must be 0 also.

This confirms our experience when dealing with dry sand, as anyone who has walked across a really dry sandy beach will remember. θ* for clean sand has values varying from about 65° for the dry material, gradually increasing to about 69° as the percentage of water increases to about 21 and then gradually reducing to about 62° when the sand is saturated with water. This increase in θ is no doubt due to the surface tension between the particles when it is moist, which gives it something approaching cohesion.† This again is within our common experience, as anyone who has tried to make sand castles at the seaside will remember, as damp sand can be made to stand with a vertical face, whereas very dry or very wet sand both refuse to do so.

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* See the paper on "Experiments on Earth Pressures" by P. M. Crosthwaite, for the Institution of Civil Engineers, 1916.

† It would therefore be more accurately dealt with as a cohesion, in the manner suggested for case (*d*).

It is not advisable for the height of a foundation to differ from its most stable position

$$h = \frac{p}{w}$$

to the full extent of the expressions represented by equations 3 or 4 because there would in that case be no factor of safety, and a foundation should be lower than the upper limit or higher than the lower limit by an amount depending on the factor of safety desired.

Rankine may perhaps be slightly to blame for the misuse of his formulæ to soils to which they do not properly apply, because although he recognised that most actual soils, except pure sand, have cohesion, he considered that such cohesion is liable to be broken down by the action of water and frost, and that therefore the only thing which could be relied upon for *permanent* stability was the friction. This of course is not so, since a foundation on blue clay, for example, at a considerable depth is sufficiently protected against the action of both frost and water to retain indefinitely any cohesion which it may possess.

If Rankine's formula were really strictly applicable to ordinary soils other than sand or soils approximating thereto then the safe pressures would always be given in terms of the depth in accordance with equation 3.

Table II gives the safe pressures on soils of different depths calculated in accordance with equation 3, taking w, the weight of the material, as 120 lbs. per cubic ft. and θ which I will call the friction angle as 30° and 60° respectively.

TABLE II.

Maximum carrying capacity* of loose granular material without cohesion at various depths from Rankine's formula

$$p = wh\left(\frac{1 + \sin\theta}{1 - \sin\theta}\right)^2 \text{ taking } w = 120 \text{ lbs./cu. ft.}$$

	Carrying capacity with $\theta = 30°$.		Carrying capacity with $\theta = 60°$.	
Depth in feet.	Lbs. per sq. ft.	Tons per sq. ft.	Lbs. per sq. ft.	Tons per sq. ft.
0	0	0	0	0
5	5,400	2·41	116,400	52
10	10,800	4·82	232,800	104
15	16,200	7·23	349,200	156
20	21,600	9·64	465,600	208
25	27,000	12·05	582,000	260
30	32,400	14·46	698,400	312
35	37,800	16·87	814,800	364
40	43,200	19·28	931,200	416

* These figures must be reduced by a suitable factor of safety for working pressures.

As previously stated, these pressures would not be safe as they would contain no factor of safety, but even if they were halved or divided by three they will be seen to produce figures which startle one. In particular, the tremendous increase with increasing value of θ is startling.

In the author's view the higher pressures indicated at the great depths would not ordinarily be suitable on building foundations as they would be accompanied with a considerable settlement owing to the consolidation of the particles. He knows of no case where foundations on sand or material without cohesion has exceeded 12 tons per sq. ft. at any depth.

It must be remembered that loose sand—to which alone these formulæ strictly apply—has voids between the solid particles varying from 40 to 20 per cent. or less, depending on the grading of the particles. It is therefore clear that considerable movement may take place owing to this consolidation which is ignored in the Rankine formulæ. Rankine assumed the material is incompressible, but at high pressures it would compress considerably.

Consider a material like sand making only point contact between its particles. It is clear that if there is a pressure of say 10 tons per sq. ft. on the foundation then the pressure of contact between the particles would be more than 10 tons per sq. ft. in proportion as the area of contact is less than the area of the foundation. Taking this ratio to be only one-third, the stress on the material would be at least 30 tons per sq. ft. The author would consider 10 tons per sq. ft. on a material like sand an upper limit irrespective of Rankine figures. Higher pressures would have an insufficient factor of safety against fracture of the sand particles and would produce settlement.

The L.C.C. Regulations give a maximum of 2 tons per sq. ft. on brown clay and 4 tons on blue clay or ballast. No mention is made of the depth of these materials, so that on the L.C.C. basis the stability would not appear to depend on the depth at all.

In the author's view this is overstating the facts in the other direction, and the author would consider it at least permissible, with suitable safeguards, to allow an increase of pressure of

$$p = wh \text{ (given in Table I)}$$

over and above what the same soil is capable of resisting near the surface; in other words, to add

the hydrostatic pressure to its carrying capacity near the surface. This he is convinced is absolutely conservative and makes no additional demand upon either friction or cohesion over and above what is already resisted by the material at the selected pressure at small depths. In other words, if a certain ballast or clay were found to be capable of resisting 2 tons per sq. ft., say at a depth of 4 ft. (the depth should, of course, always be below the

of the building. It is clear, for example, that if a building be founded on a material approximating to Rankine's assumptions, viz., loose sand, and a pressure were adopted, depending on a certain height of material above the foundation, and this were subsequently excavated away for an adjacent building, or for any other reason, the foundations of the first building would be jeopardised even if the foundations of the second building went no

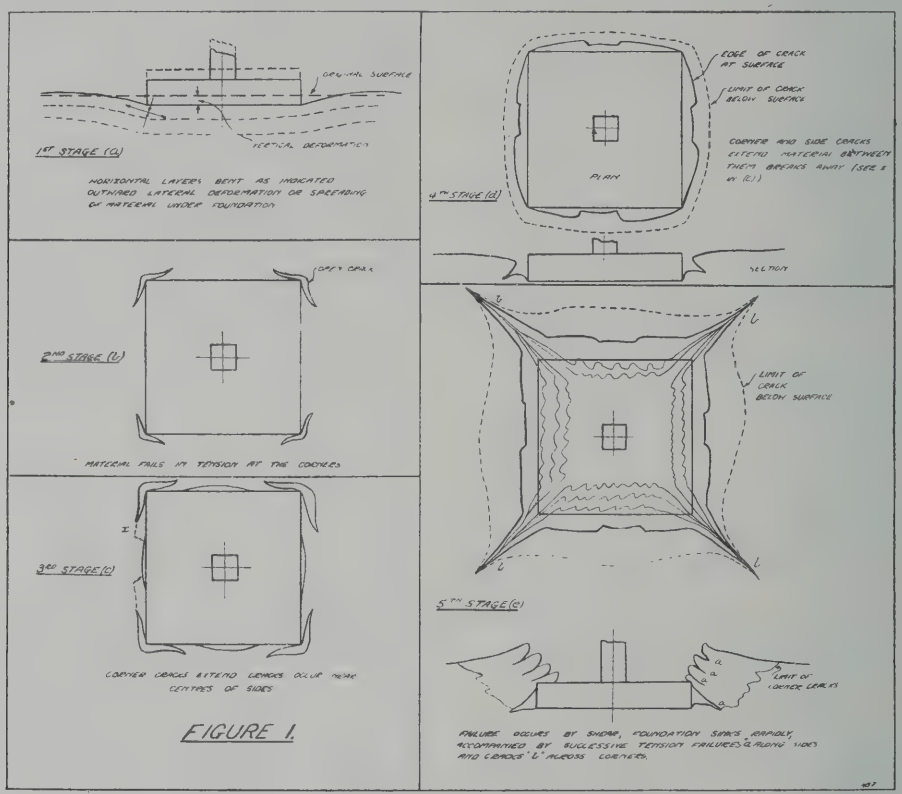

ORIGINAL SURFACE
VERTICAL DEFORMATION
1ST STAGE (a)
HORIZONTAL LAYERS BENT AS INDICATED
OUTWARD LATERAL DEFORMATION OR SPREADING OF MATERIAL UNDER FOUNDATION
EDGE OF CRACK AT SURFACE
LIMIT OF CRACK BELOW SURFACE
CORNER AND SIDE CRACKS EXTEND MATERIAL BETWEEN THEM BREAKS AWAY (SEE 5 IN (b))
PLAN
4TH STAGE (d)
SECTION
SOFT CRACK
2ND STAGE (b)
MATERIAL FAILS IN TENSION AT THE CORNERS
LIMIT OF CRACK BELOW SURFACE
3RD STAGE (c)
CORNER CRACKS EXTEND LENGTHS OCCUR NEAR CENTRES OF SIDES
5TH STAGE (e)
LIMIT OF CORNER CRACKS
FAILURE OCCURS BY SHEAR, FOUNDATION SINKS RAPIDLY, ACCOMPANIED BY SUCCESSIVE TENSION FAILURES ALONG SIDES AND CRACKS 'b' ACROSS CORNERS.
FIGURE 1.

FIG. 1.—SOILS POSSESSING COHESION BUT NO FRICTION. FIVE STAGES OF FAILURE

frost line or the line above which the clay is affected by seasonal variations of moisture contents), then the same soil at a depth of 30 ft. would be capable of carrying an additional 1½ tons per sq. ft. without making any greater demands on the material either by way of friction or of cohesion.

An examination of this Table I will show that these figures are quite important. In many cases it would even be safe to exceed them, but they at least are in the author's view conservative.

The depth must, of course, be measured from a surface which exists at the time of building and can reasonably be relied upon to remain for the lifetime

deeper and possibly not so deep as those of the first building.

Fortunately we do not in practice often deal with materials like sand, and therefore the point is not so important as it otherwise would be, but it is interesting to remember that for such a material the load is in this sense carried by the material above the foundation just as much as by the material below it.

Enough has perhaps been said to show that Rankine's formulæ lead to results which, though useful and interesting, and nearly true for loose sand, are widely discordant with our experience on com-

mon soils. The common practice of applying them to all soils is therefore ridiculous and should cease.

Coming now to class (*c*), *soils possessing cohesion but no friction.*

It is curious that no study appears to have been made of these, yet they are instructive and interesting.

A soft clay with considerable water contents approximates much more closely to this case than to a material obeying Rankine's formulæ with a low value of θ.

The author has therefore made an experimental study of this class of material, which, not being complete, he will only refer to in a general way.

The nearest approach that he knows of an actual material to the condition of the ideal material possessing cohesion but no friction is jelly. The fact of cohesion in this material is evinced in the fact that loads may be placed on it without settlement (though not without slight deformations which are common to all solids under stress), and by the fact that it will stand up with a vertical face.

The comparative absence of friction is evinced by the way vibrations in the material continue undamped, and it is well known that damping of vibration is a measure of friction. Jelly as an experimental material has the great advantage that cohesion can be varied (by varying the gelatine contents) and what happens below the surface is readily seen.

Fig. 1 illustrates what happens when a square foundation resting on such a material is loaded with a gradually increasing load till failure occurs.

The Figure needs little explanation. It is remarkable that the increase of deformation with increasing load is almost constant through all the stages 1 to 4. When stage 5 is reached, the foundation punches its way to the bottom. Failure occurs when the horizontal layers, which are clearly lengthened under deformation, are stretched more than they will stand. This naturally occurs first at the corners where the lengthening is greatest.

The failure seems to suggest two things.

(1) That as final failure occurs by a kind of shear or punching, the breaking load might vary with the periphery rather than with the area. In other words, that if foundation A is 5 ft. sq. and B is 10 ft. sq., the breaking load on B might be nearer twice that on A rather than four times. My experiments so far indicate that it lies somewhere between the two, but more experiment is required and is under way.

(2) That foundations rounded in plan and having the bottom edge rounded might carry higher loads. This also needs more experiment and this is in hand.

My paper would be too long if I attempted here anything more than a brief mention of these matters.

A mathematical analysis indicates that a material having cohesion but negligible friction will have a carrying capacity of

$$p = wh + 4k \quad . \quad . \quad . \quad (5)$$

where k is the shear resistance of the material.

The shear strength of the clay in any particular foundation can be measured by experiment.

Values given by A. L. Bell, M.Inst.C.E.,* are as follows :—

	Tons per sq. ft.
Very soft puddle clay	0·2
Soft puddle clay	0·3
Moderately firm clay	0·5
Stiff clay	0·7
Very stiff boulder clay	1·6

This table is difficult to apply because the description is insufficient, but tests can be made on the actual material of a foundation.

Taking the values of ·7 for stiff clay to which he refers and ignoring any friction, the carrying capacity at various depths would work out as in Table III.

TABLE III.

Carrying capacity at various depths of soil having shear strength of 0·7 ton per sq. ft. and negligible friction

$$p = wh + 4k$$

Depth in ft.	Carrying capacity. Lbs. per sq. ft.	Tons per sq. ft.
0	6,270	2·8
5	6,870	3·07
10	7,470	3·34
15	8,070	3·60
20	8,670	3·87
25	9,270	4·14
30	9,870	4·41
35	10,470	4·68
40	11,070	4·95

In his experiments, Mr. Bell found that stiff clay had some friction, which has the effect of increasing the carrying capacity with increasing depth more than is indicated by Table III.

It will be seen that these figures agree much more closely with our experience with common soils than those in Table II, based on Rankine's formula, showing again that the assumption of cohesion without friction is a closer approximation to fact for

* Paper before Inst. Civil Engineers, 1914.

common soils and particularly clay than Rankine's assumption of friction without cohesion.

Soils possessing cohesion and friction (*d*).—I now come to our final classification. This, with suitable values for the cohesion and friction, is applicable to all soils. Mathematical analysis shows that the maximum pressure on a foundation at a depth h is given by

$$p = wh\ tan^4\left(\frac{\pi}{4}+\frac{\theta}{2}\right) + 2k\ tan^3\left(\frac{\pi}{4}+\frac{\theta}{2}\right) + 2k\ tan\left(\frac{\pi}{4}+\frac{\theta}{2}\right) \quad . \quad . \quad . \quad . \quad (6)$$

where k is the shear strength of the soil and θ is the angle whose tangent is the coefficient of friction of the material. Both these can be measured and tested on an actual soil. All the preceding formulæ can be derived from this.

Putting $k=0$, and $\theta=0$, it reduces to

$$p=wh \quad . \quad . \quad . \quad . \quad (2)$$

Putting $k=0$, it reduces to

$$p=wh\left(\frac{1+sin\,\theta}{1-sin\,\theta}\right)^2 \quad . \quad . \quad (3)\ (\textit{slightly rearranged}).$$

$$\left[\text{since } \frac{1+sin\,\theta}{1-sin\,\theta}=tan^2\left(\frac{\pi}{2}+\frac{\theta}{2}\right)\right]$$

Putting $\theta=0$, it reduces to

$$p=wh+4k \quad . \quad . \quad . \quad . \quad (5)$$

our formula for cohesion without friction.

Table IV shows the result of applying this formula to a soil having a shear strength $k=0{\cdot}7$ ton per sq. ft. and a friction angle $\theta=7°$ which Mr. Bell gives for a particular "stiff clay."

TABLE IV.

Carrying capacity at various depths of soil having a shear strength of 0·7 ton per sq. ft. and a friction angle of 7°.

(See formula 6.)

Depth in ft.	Carrying capacity. Lbs. per sq. ft.	Tons per sq. ft.
0	8,060	3·6
5	9,040	4·04
10	10,020	4·48
15	11,000	4·91
20	11,960	5·34
25	12,950	5·78
30	13,930	6·23
35	14,910	6·66
40	15,900	7·1

It will be seen that the results divided by a factor of safety of 1·5 would agree well with our experience of London blue clay.

The formula is, however, equally applicable to ballast and other soils by using the appropriate constants which can be ascertained by testing for any actual material.

Formulæ 5 and 6 avoid a difficulty which many designers must have felt which may be expressed as follows.

A certain foundation carrying, for example, 200 tons is desired to be founded at a certain level on a foundation 10 ft. sq., giving 2 tons per sq. ft. At this level, however, the soil is not considered good enough to carry 2 tons per sq. ft. and the hole has then to be carried down an additional 20 ft. in depth before a satisfactory soil is reached. At the lower depth the foundation, however, now has to carry not only the original 200 tons but also the weight of the material forming the pier between the higher level originally contemplated and the lower level. This may form a considerable proportion of the 200 tons to be carried and therefore the pressure per sq. ft. at the lower level will necessarily be greater than what it was at the higher level.

A strict interpretation of the Building Act as it stands at present would not allow of this increase of pressure, yet it is quite clear that had the foundations been founded at the higher level then the soil at the lower level would in point of fact have carried it plus the 20 ft. of earth intervening; and, therefore, it is quite reasonable to take the carrying capacity of the soil at the lower level as 2 tons per sq. ft. plus the weight of the soil between the two levels. This is exactly what the formula 5 does.

PART II.—PRACTICE.

In presenting this portion of the paper to the Institute, the author realises that many of the subjects and examples on which he proposes to touch briefly will necessarily be quite familiar to some of his audience.

The design and construction of foundations has been subject to gradual growth and development as fresh problems presented themselves with the taller and heavier structures which are now demanded, and also as a result of comparatively modern materials such as steel and reinforced concrete. It is hoped, nevertheless, that to some at least of the audience a description of actual difficulties experienced in practice and the methods by which they were solved may at least be suggestive and serve a useful purpose.

Ferro-concrete Rafts.—The author in his practice has been much impressed with the virtues of ferro-concrete rafts in many situations for solving foundation problems. As ferro-concrete itself is for practical purposes only from 20 to 30 years old, such construction may legitimately be considered to be modern.

Among the principal advantages of concrete rafts as foundations may be included the following :

(1) The pressure is distributed over the maximum possible area of soil, and therefore the pressure per sq. ft. is reduced to a minimum.

(2) Any tendency to unequal settlement is minimised, as a raft properly designed has a certain power of bridging over soft places and applying the loads to those parts best able to receive them.

(3) The raft also forms a tie preventing the lateral spreading of foundations which is sometimes important.

(4) In the case of buildings with deep basements, where the lower floor is frequently far below water level, some sort of raft construction is necessary to receive the upward water pressure and prevent it from flooding the basements. In these cases the raft and the retaining walls form together a box which, by means of asphalte or other means, is rendered watertight.

Reviewing these points in detail, it frequently happens nowadays that a soil which would be quite insufficient with the normal pressures which isolated foundations would produce on the soil can be founded upon quite safely under a well-designed raft, and so avoid the necessity for sinking to great depths to secure a foundation of sufficient carrying capacity. The saving will, of course, depend on the depth at which this better foundation is found, and is, of course, enhanced when special difficulties such as water and perhaps the necessity of underpinning surrounding buildings are entailed in this process of digging to great depths. It frequently happens that a concrete raft can also be used as a floor in the building, and so increased economy is obtained. It some-

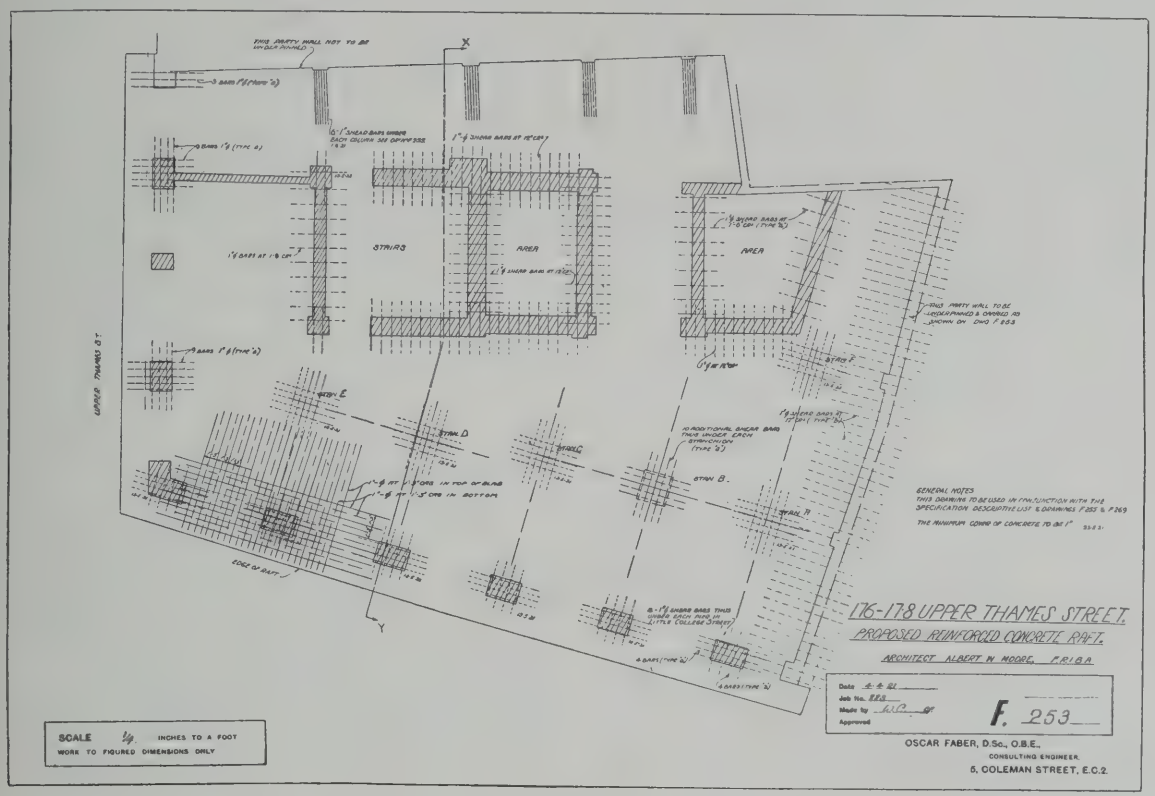


FIG. 2

times requires a good deal of courage to found on soils which in the ordinary way would be considered quite dangerous, and yet the author's experience is so favourable with these concrete rafts when properly designed as to give him a great deal of confidence.

In the case of a large warehouse of six storeys in Lower Thames Street, for which Mr. Albert Moore, F.R.I.B.A., was the architect, it was found on examining the foundation soil that it consisted of black river mud, and a trial hole indicated that it would be necessary to take the foundations down a matter of 12 ft. below the basement floor and into water before a satisfactory soil in the ordinary sense would be reached.

After some consideration it was decided to float the building on a concrete raft on the black mud at the higher level. It was found that the pressure per sq. ft. under this raft would be of the order of 1,700 lbs. per sq. ft., which the writer considered would be safe for the mud in question, though he would not have dared to use it under isolated foundations. Figs. 2 and 3 show details of this raft.

The builder in question was so alarmed at the instructions he received to construct this raft on the black mud that he caused his solicitor to write letters of protest to the architect and to disclaim all responsibility for all the terrible things he was certain would result. He followed this up by having levels taken at each stanchion every week. During the construction of the building he continued this, which was no doubt a very wise precaution from his point of view under the circumstances, but about a year after the completion he came to express his amazement of the fact that there had not been 1-16th in. movement that he had been able to detect with his levelling.

A very large saving to the client resulted from this method of dealing with the problem, and I think most of us would have hesitated to found a building on this mud in any circumstances.

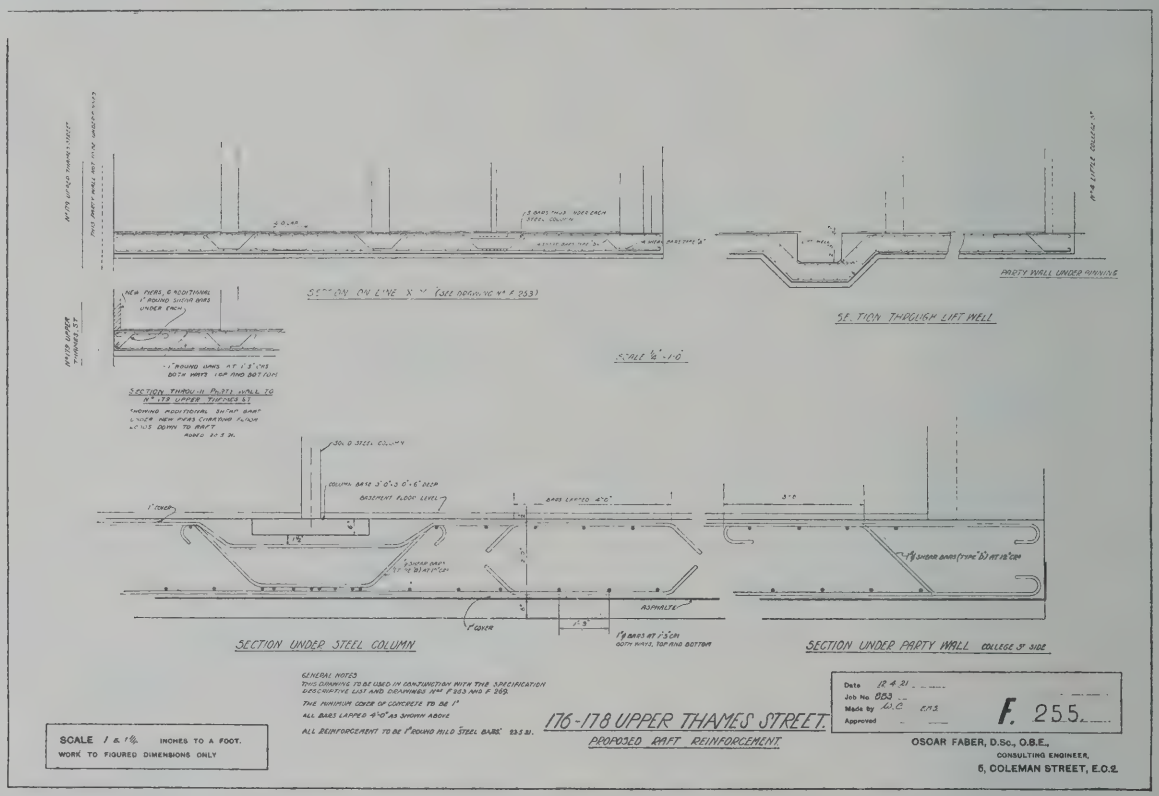

SECTION ON LINE X-Y (SEE DRAWING No F 253)
SECTION THROUGH LIFT WELL
PARTY WALL UNDER RUNNING
SCALE ½"-1'-0"
SECTION UNDER STEEL COLUMN
SECTION UNDER PARTY WALL COLLEGE ST SIDE
GENERAL NOTES
THIS DRAWING TO BE USED IN CONJUNCTION WITH THE SPECIFICATION DESCRIPTIVE LIST AND DRAWINGS Nos F 253 AND F 255.
THE MINIMUM COVER OF CONCRETE TO BE 1".
ALL BARS LAPPED 4'-0" AS SHOWN ABOVE
ALL REINFORCEMENT TO BE 1" ROUND MILD STEEL BARS B.S.S.
176-178 UPPER THAMES STREET.
PROPOSED RAFT REINFORCEMENT
SCALE 1 & 1½ INCHES TO A FOOT.
WORK TO FIGURED DIMENSIONS ONLY
Date 12.4.21
Job No 853
Made by W.C
Approved
F. 255
OSCAR FABER, D.Sc., O.B.E.,
CONSULTING ENGINEER,
5, COLEMAN STREET, E.C.2.

FIG. 3

Perhaps one of the most interesting applications of rafts of this kind is to the large and important buildings being erected in Shanghai. The soil here consists of a sandy clay brought down by the Yangtze River quite recently, geologically speaking, and contains so much water still as to be properly described as soft mud. The top 6 ft. has dried out a little more than below. Bore-holes have been sunk to a depth of over 400 ft., but instead of coming across more solid strata the material remains soft mud for the whole of this depth. The amazing thing is that on this soil magnificent large modern buildings, equal in size and magnificence to anything we are erecting in England, are being built (see Fig. 4). The construction in every case takes the form of a reinforced concrete raft spreading the load over the whole area of the site and somewhat beyond it. This raft takes a certain proportion of the weight of the building, and the rest is carried by piles driven into the ground before the raft is built. These piles do not rest on anything more solid, but add considerably to the resistance in virtue of the additional skin friction between them and the mud, or, looking at it from another point of view, they transfer part of the pressure from near the surface where the carrying capacity of the soil is low to a lower level where the soil is quite as soft, but has a higher carrying capacity by virtue of its depth, as previously explained.

It has been my privilege to be associated with the firm of Messrs. Palmer & Turner, of Shanghai, in the construction of the Hong Kong Bank, the Chartered Bank, and the Yokohama Specie Bank, all of which are treated in this manner, and at the present time on the new Custom House. As the foundations are similar in all these cases, it will be sufficient to describe one of them, and for this purpose I select the Custom House.

This building is 450 ft. by 140 ft. in area, and has normally 7 floors, though the front block has 9, and has in addition a tower 265 ft. high (see Fig. 5).

Drawings will be shown of the raft and the piles (Figs. 6 to 10). The raft takes the form of a continuous slab of reinforced concrete varying in thickness from 16 in. to 24 in. under the tower and stiffened by ribs in both directions, which are generally about 22 ft. apart. These ribs form reinforced concrete beams and normally have a depth of 6 ft., including the bottom slab, but under the tower are increased to 9 ft. The columns rest on the tops of these beams at their intersections.

The most difficult portion in the case of the Custom House is that immediately under the tower. The total load which comes down in four small areas under the four corners of the tower is altogether 6,700 tons, and this load is distributed by the raft over an area of approximately 60 ft. sq. Of this total load 2,240 tons are carried by the direct action of the soil on the raft and 4,460 tons by the 225 concrete piles in this area. It will readily be understood that to transmit these heavy loads over this area requires very considerable strength, and the details of the reinforced concrete beams which will be shown are perhaps of interest.

The main reinforcements are $1\frac{1}{4}$ in. diameter, and the largest beams have 16 such rods in the tension side. The shear strength has to be very carefully considered with beams of this kind, and both bent-up rods and stirrups are used for this purpose.

The piles are of reinforced concrete 50 ft. long, 16 in. square, and the surface is serrated to give additional friction resistance.

One of the difficulties on a soil of this kind is that even after taking all these precautions considerable settlements are experienced. These settlements are not found to be damaging, provided the whole building settles at the same speed and the same amount. To ensure this it is necessary to proportion the carrying capacity of the back of the raft to its particular load, so that no portion shall tend to settle more than any other. This is effected by so distributing the piles as to provide for each section of the raft exactly the additional resistance required over and above what the soil itself will carry. It will be seen that in structures of this kind it is just as dangerous to make one part of the raft too strong as to make another part too weak, because the part that is too strong would fail to settle with the rest and would then cause the structure to break its back.

The safe pressure on the soil allowed by the Shanghai regulations is only 1,600 lbs. (about $\frac{3}{4}$ ton) per sq. ft., and it is, I think, remarkable that with such a soil buildings of this magnitude can be erected at all.

It is usual in the case of large buildings in Shanghai to estimate beforehand what the likely settlement will be and build the structure above

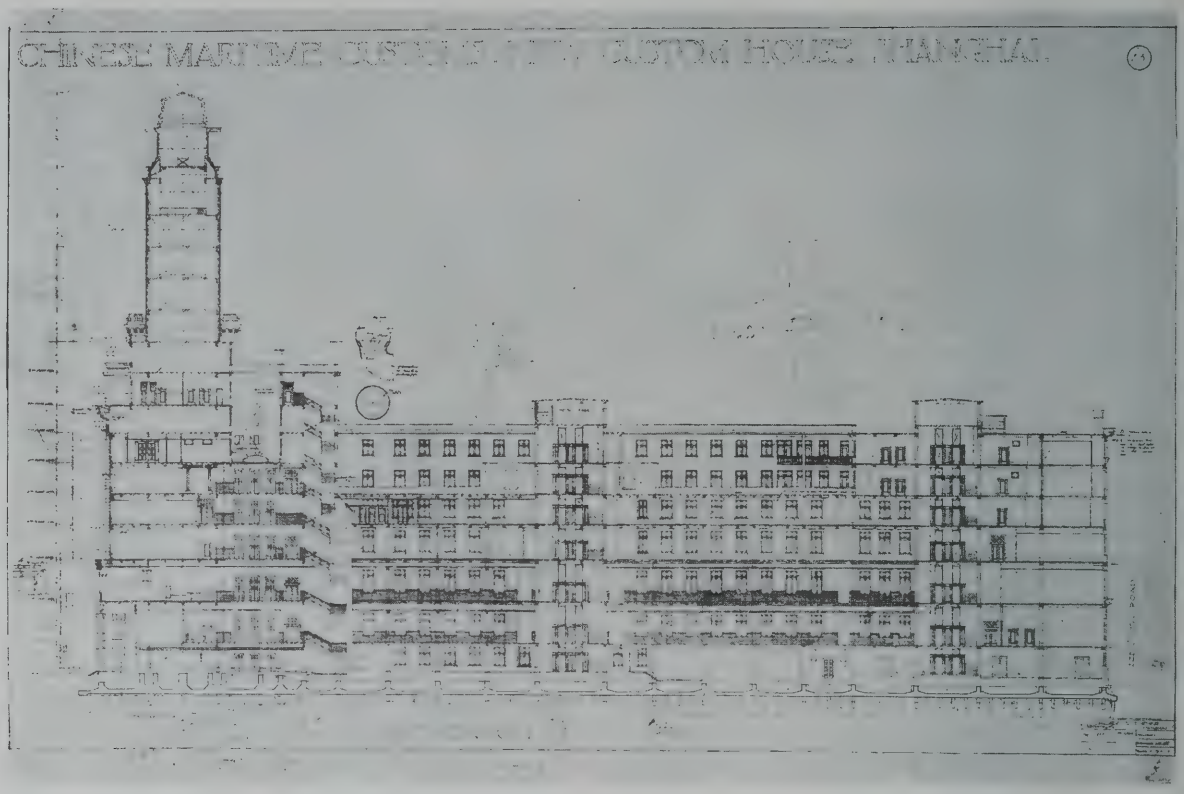


FIG. 5.—NEW CUSTOMS HOUSE, SHANGHAI. (Longitudinal Section)

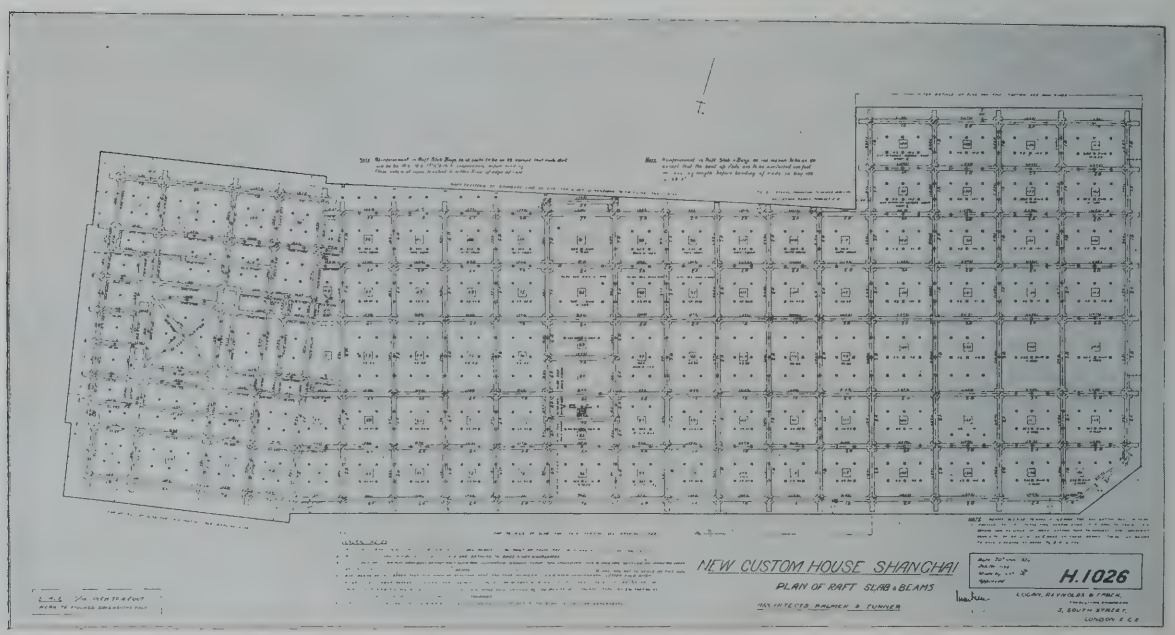


FIG. 6.—NEW CUSTOMS HOUSE, SHANGHAI

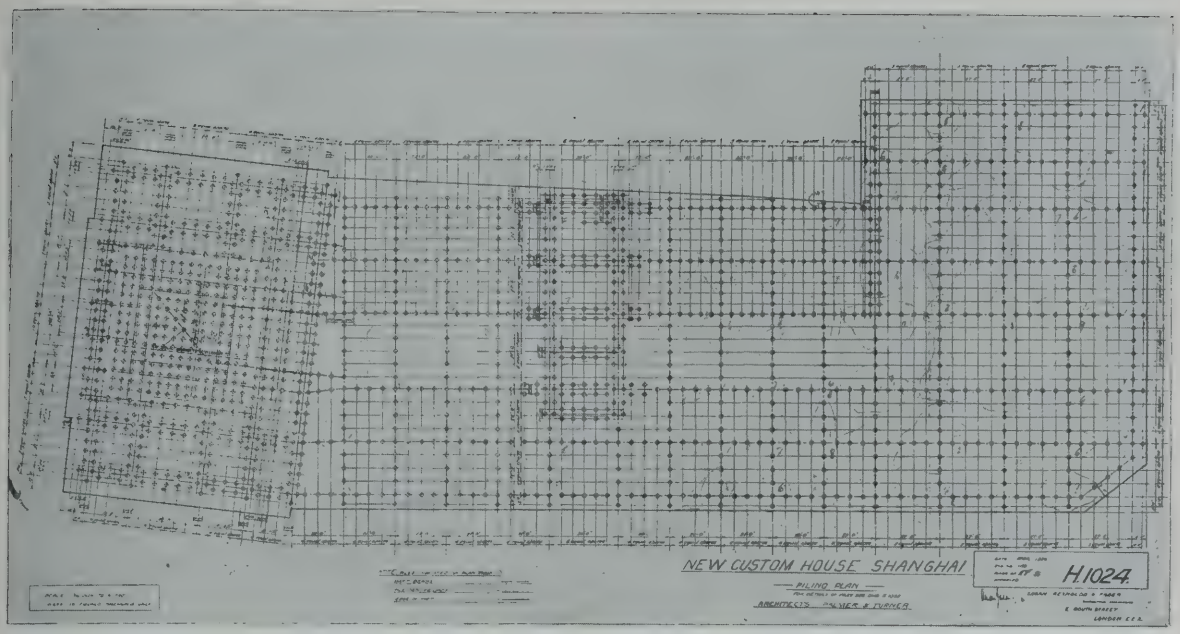

NEW CUSTOM HOUSE SHANGHAI
PILING PLAN
H.1024

FIG. 7

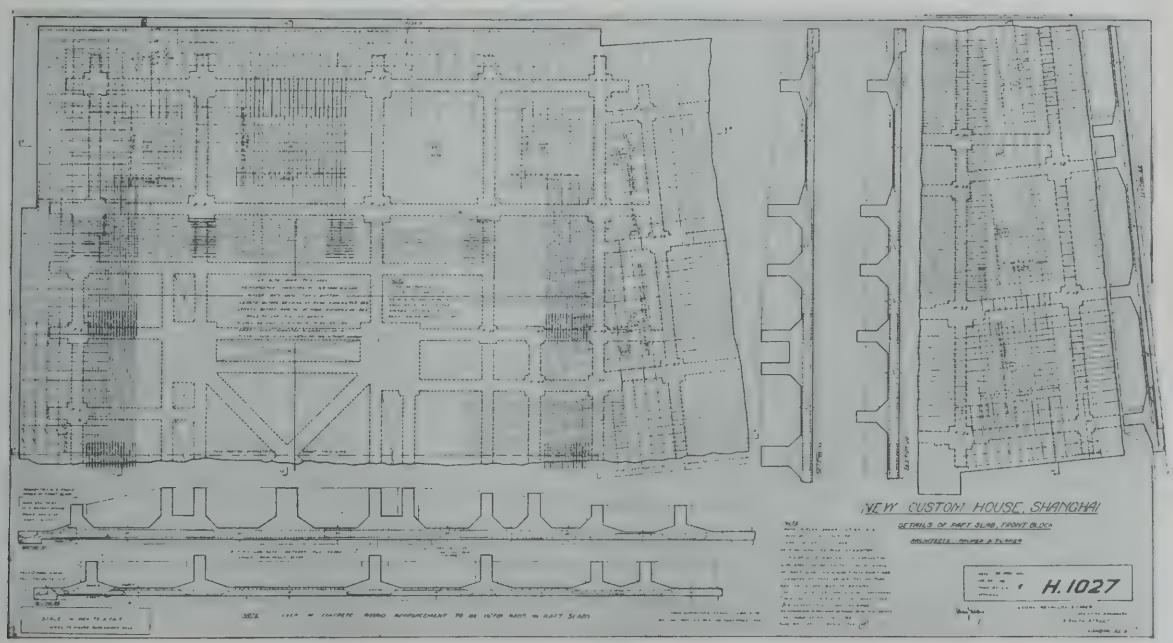

NEW CUSTOM HOUSE, SHANGHAI
DETAILS OF RAFT SLAB, FRONT BLOCK
H.1027

FIG. 8

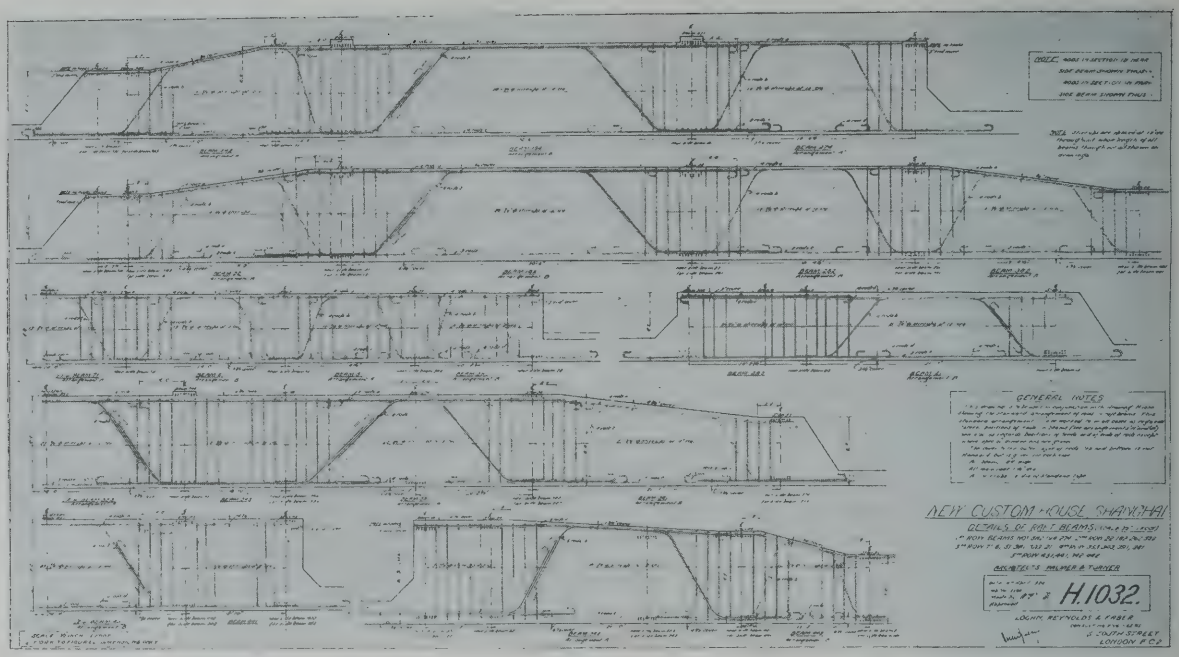

GENERAL NOTES
NEW CUSTOM-HOUSE, SHANGHAI
DETAILS OF R.S.J. BEAMS
H.1032.

FIG. 9

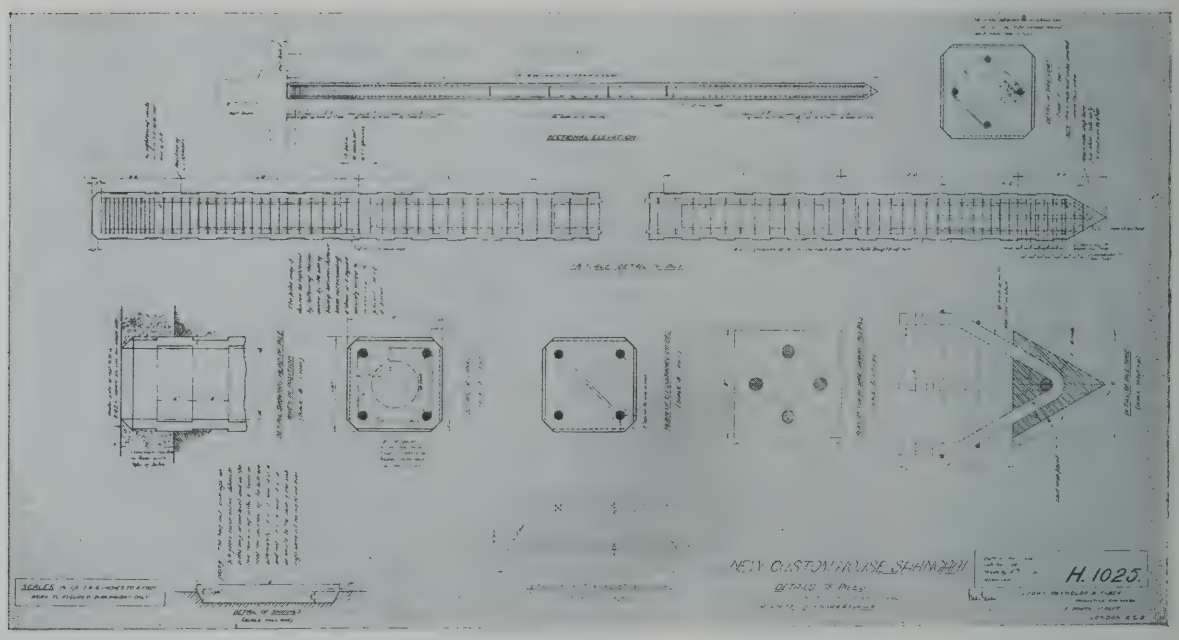

NEW CUSTOM HOUSE SHANGHAI
DETAILS OF PILES
H.1025.

FIG. 10

its final level by this amount. In the case of the Hong Kong Bank and the Chartered Bank, the ground floor was made at a level of 12 in. above the position where it was thought likely to come to rest, and temporary steps were erected from the street, which were removed one at a time as settlement proceeded. The actual movement on the Hong Kong Bank up till last summer was approximately 9 in. to 10 in.

the top level with ground level. The portion between the walls is raised up above the ground so as to form the ground floor and actually rests on hard core rolled on to the mud to receive it. In this way the raft also forms the ground floor, and so makes a considerable economy, and deep foundations below water-logged ground were entirely avoided. There has been no settlement, in spite of the fact that heavy engines supplying

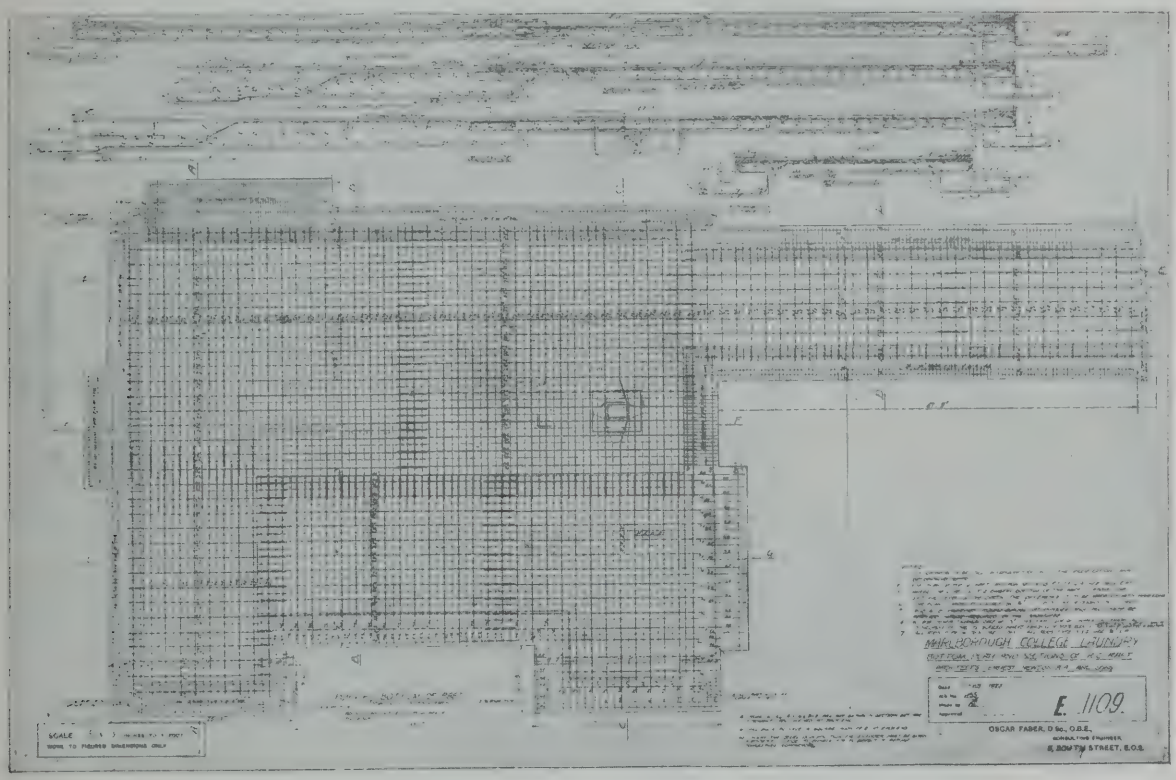


FIG. 11.—REINFORCED CONCRETE RAFT, MARLBOROUGH COLLEGE LAUNDRY

I would like to refer to one or two special examples of small rafts which, in spite of their being small, have special points of interest. One of these is represented by the rafts for the laundry and power house at Marlborough College, for which Messrs. W. G. & H. A. Newton were architects. (See Figs. 11, 12, 13 and 13a.)

This is founded on very soft low-lying soil, and it was desired to keep the ground floor 18 in. above the general level of the ground owing to the risk of floods. A raft foundation was used, the portion near the walls being about 9 in. thick and

both the College and the town with electric light are founded on the raft and produce considerable vibration.

A specially interesting raft was used in the Harrow Music School. This structure, which was some 50 years old, was built on the side of a hill at Harrow on yellow clay, which in Harrow is particularly treacherous. The building was originally built on brick tiers averaging 14 ft. to 16 ft. below ground floor, and spread on concrete piers averaging perhaps 5 ft. square. At the date when I was interested in it, a year or two ago, settle-

ments in the building were so pronounced as to render it dangerous, and the settlements were proceeding. Some repair work had been done a few years previously, but had not stopped the settlement. Calculations of the bearing pressure under the piers showed that these pressures, though only amounting to about $1\frac{2}{3}$ tons per sq. ft., were more than the clay would resist without settlement, in spite of the depth of the piers.

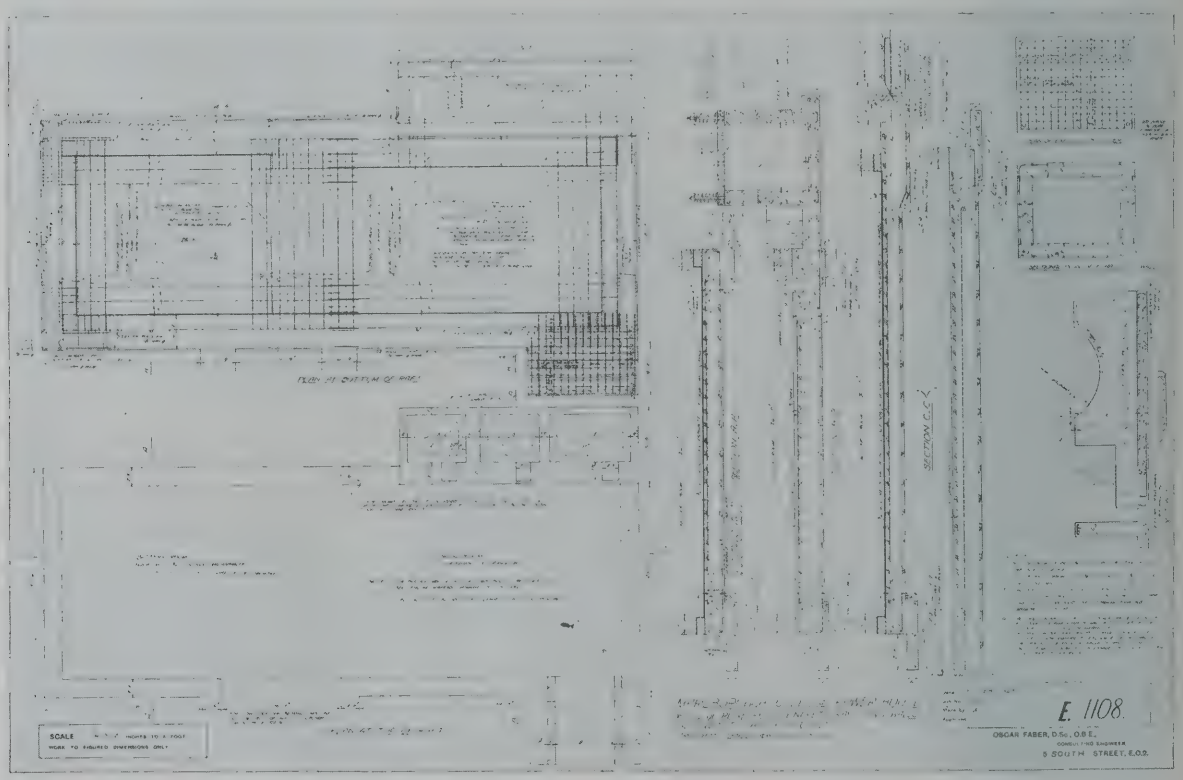


FIG. 12.—REINFORCED CONCRETE RAFT, MARLBOROUGH COLLEGE POWER HOUSE

Underpinning would have been a very hazardous and expensive operation, and I recommended the construction of a concrete raft only 8 in. thick to be constructed as a basement floor and chased into the existing piers so that no further settlement could take place without taking the raft with it. (See Fig. 14.) This raft had to be constructed at various levels owing to the slope of the ground, and was an inexpensive operation, and I am told that no further settlement has taken place.

The effect of the raft was to reduce the pressure down to only 1,100 lbs. per sq. ft., which practically any soil will resist without settlement.

Leaving rafts now, I would like to say a word in connection with concrete piles. Up till quite recently piles for carrying buildings were practically always of timber. This material has all sorts of advantages, but unfortunately one very serious drawback, viz., that even under favourable circumstances it cannot be relied on for more than 100 years, and where the timber is exposed to both air and water this period may be reduced to 20 years or even less.

It therefore has serious disadvantages in modern building construction, and though I understand timber piles were recently used in a very large and important building in London I cannot imagine that this will be the practice of the future.

The life of reinforced concrete is a subject about which there has been much speculation and difference of opinion, but I think the matter is fairly summed up as follows.

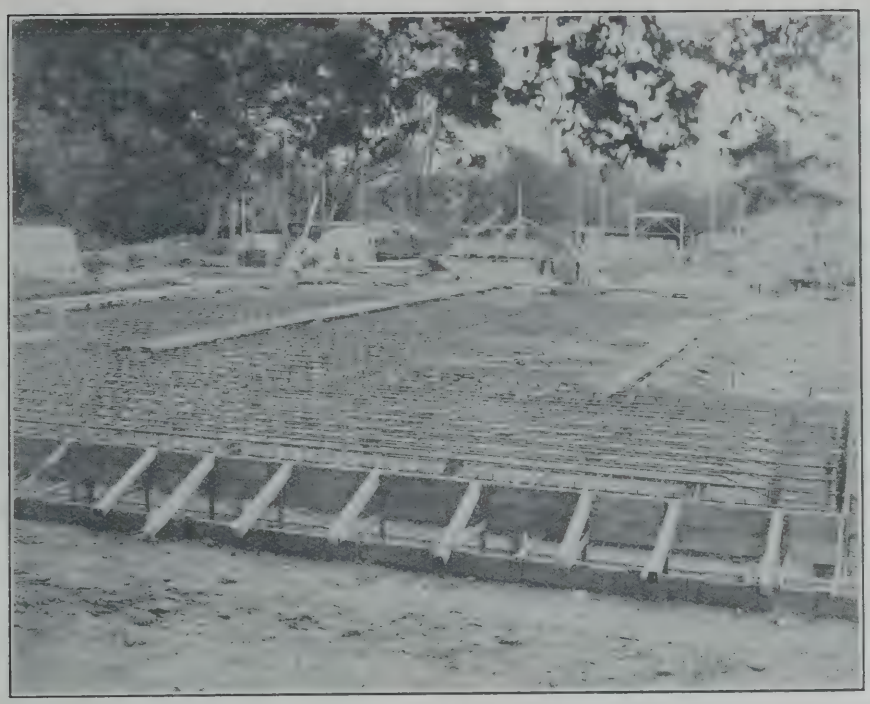


FIG. 13.—MARLBOROUGH COLLEGE POWER HOUSE RAFT
Photo of reinforcement before concreting

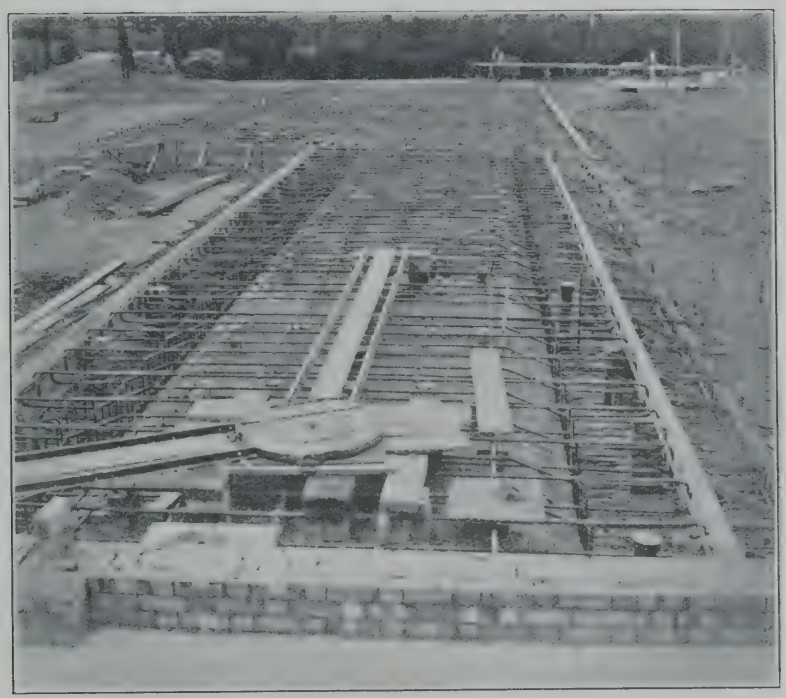


FIG. 12A.—MARLBOROUGH COLLEGE LAUNDRY RAFT
Photo of reinforcement before concreting

We have little actual experience of reinforced concrete of more than 30 years, but such as we have goes to show that with certain reservations it is as good to-day as it was the day it was made. These reservations are as follows :—

(1) Where the cover of concrete is inadequate in thickness or where the concrete has been of faulty materials or gauged with insufficient cement, or where the concrete has been broken away by mechanical injury or was imperfect from the first, has the support of some architects, though it necessarily puts the designer in the uncomfortable position of having to skin the design to the bone or lose the job to a lowerer tenderer. Reinforced concrete is really the worst material for such treatment, because the difference between a design with adequate protection and one without, which may represent perhaps only 5 per cent. in cost, may mean the difference between 20 and 100 years in the life.

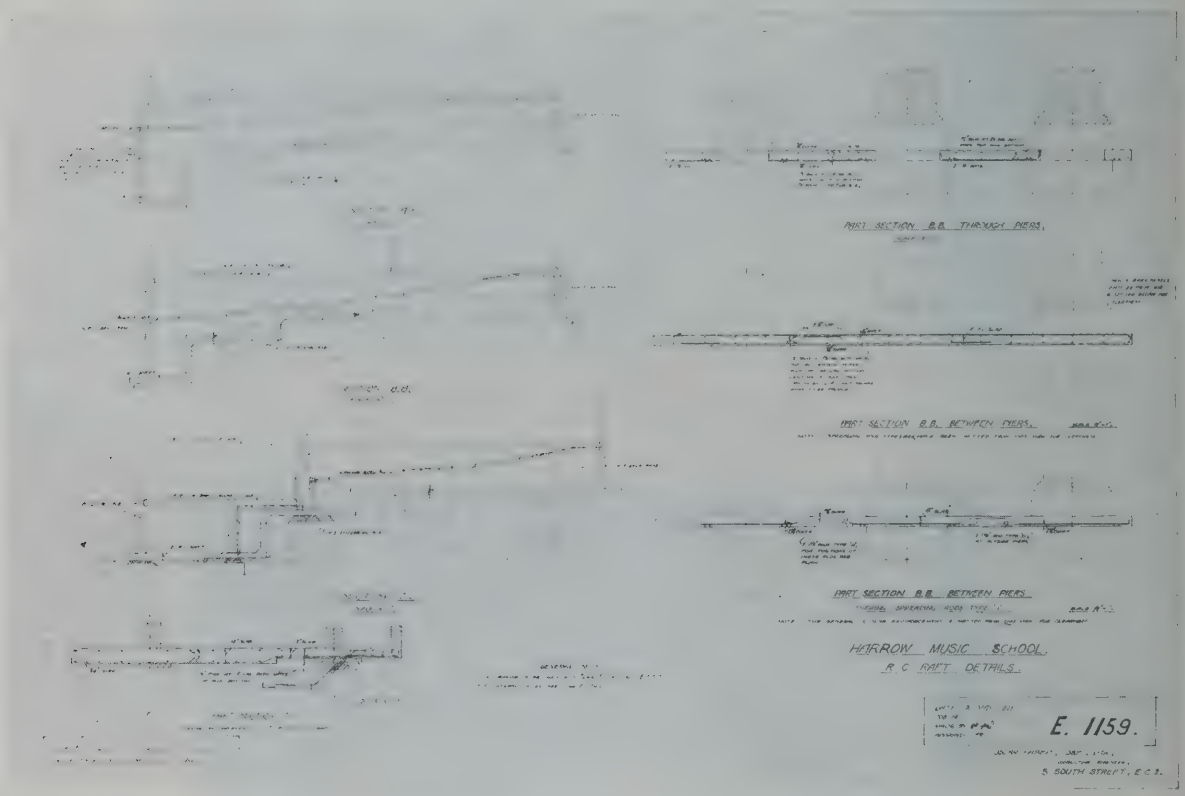


Fig. 14.—Harrow Music School. Reinforced Concrete Raft

owing to carelessness in concreting, corrosion has set up.

(2) Reinforced concrete seems to stand fresh water perfectly, but suffers deterioration in sea-water and water in boggy or peaty land containing organic acids unless special precautions are taken. The use of reinforced concrete has suffered, and will suffer, from the insane system of competitive and commercialised, as opposed to professional, designing which, strangely enough, still

Nevertheless, the writer is quite convinced, both from theoretical considerations and from the evidence of the oldest structures that we have, that where the design and execution are the best of their respective kinds, then reinforced concrete in ordinary situations is the most lasting material which we have, with the possible exception of the best stonework and brickwork, the exclusive use of which is generally impossible in modern secular buildings owing to the excessive space which they demand.

In the case of concrete piles, we have an excellent application of reinforced concrete where it probably has no equal. One of its objections until quite recently was the length of time which it takes to harden sufficiently to stand driving. This disadvantage has recently been practically obviated by the great advances made in the manufacture of cement. Not only has there been a gradual but marked improvement in ordinary cement over the last 20 years, but remarkable advances in the last year or so are still more noteworthy.

While the current British Standard Specification for cement still specifies 200 lbs. per sq. in. as the minimum tensile strength of 3 to 1 briquettes at the age of 7 days, it is now no uncommon thing to get samples of cement giving 350 up to 450 lbs. per sq. in. Early in December I received a sample which on test gave 548 lbs. per sq. in.

The Associated Portland Cement Manufacturers have recently brought out a new rapid hardening Portland cement which I had the opportunity of testing quite recently in which the tensile tests gave

312 lbs. per sq. inch in 1 day.
516 „ „ „ 2 days.
583 „ „ „ 3 „
611 „ „ „ 5 „
688 „ „ „ 7 „

The corresponding crushing stress showed the same advances over ordinary cement. It will be seen that this cement attains a greater strength in one day than the British Standard Specification would require as a minimum in 28 days. Six to 1 concrete made with this same cement gave the following stress in crushing :—

1 day, 1,750 lbs. per sq. inch.
2 days, 2,910 „ „
3 „ 3,853 „ „
5 „ 4,840 „ „
7 „ 5,360 „ „
28 „ 6,810 „ „

The effect of this is to give us the strength in one or two days which we were previously satisfied to get at the end of 28 days, and the effect of this on reinforced concrete work is obvious.

Another recent cement of special quick-hardening properties is the so-called aluminous cement imported from France, in which 6 to 1 concrete has given the following tests :—

2 days, 5,330 lbs. per sq. inch.
3 „ 6,030 „ „
7 „ 8,240 „ „

These results are slightly higher even than the quick-hardening ferro crete, but the aluminous cement is also considerably more expensive.

Compare these with ordinary concrete where a strength of about 2,000 lb. per sq. inch in 28 days is quite normal and it will be realised what tremendous advance has recently been made. The advantage of this was recently taken by the Author in a small work of considerable interest.

The foundations of Marlborough Hall were found to be settling when the structure was nearing completion and on examination it was found that cracks in the walls were opening and accurate levels indicated that considerable settlement was still taking place, an inch of settlement being recorded in a fortnight.

The ground here is water-logged immediately below the foundations so that underpinning would have presented very great difficulties. It was also considered that to withdraw the water by pumping from the foundations it was desired to underpin would have produced a dangerous situation.

The matter was dealt with by driving trestles consisting of two piles, one of which was driven as near to the foundation as possible and the other about 10 feet away (See Fig. 15). Two 16 by 6 steel joists were then fixed to the tops of the piles, overhanging the nearest one so as to pick up the foundation. The nearer pile of course is then in compression and the outer pile acts as a tie to hold the end of the lever down. These piles ought obviously to be lasting as the safety of the structure would depend on them, and it was not considered that timber would be suitable for this purpose as the top of the timber piles would be alternately exposed to air and water, depending on the level of the river.

Concrete piles were the ideal thing, but it was clear that we could not wait two months for the concrete piles to be made, matured and driven as the settlement in the interval would have endangered the building. Actually the concrete piles were made with the new aluminous cement and were successfully driven when they were two days old. They were driven with a 2-ton monkey with a 3-feet drop to a set of about $\frac{1}{8}$ inch per blow. The steel cantilevers were then bolted down to them by straps and bolts through holes which had been previously cast in the piles to receive them and the joists with their straps and bolts were then cased in concrete to protect them from corrosion.

This has been entirely successful, and no movement has occurred since, and the work was done at a very moderate cost considering the circumstances.

While on the subject of concrete piles it is perhaps interesting to mention that there are in existence about ten formulæ for determining the safe carrying capacity of a pile from the weight of the monkey, its drop and the final set per blow. These formulæ all give greatly differing results and I have known cases where these results have differed as much as from 20 tons to 140 tons. It is clear they are all quite unreliable and indeed they all fail to take into account some of the important factors on which the carrying capacity of the pile depends ; one of these, perhaps the most important one, is the " taking up " as it is called, when the pile is allowed to rest after driving.

The Menin Gate in Ypres for which Sir Reginald Blomfield is the architect has foundations consisting of roughly 25 feet of quicksand with blue clay below. The foundation consists of about 500 ferro-concrete piles 40 feet long extending through the quicksand and roughly 15 feet into blue clay. A 3-ton monkey dropped 3 feet produces on these piles a set of somewhere between $\frac{1}{4}$ to $\frac{3}{8}$ inch per blow.

An interesting test was made on some of these piles by leaving them for a month or so and then applying the same blows to a pile as had produced $\frac{3}{8}$ inch set per blow during driving. The effect of 20 blows on the pile was nil and the pile absolutely refused to drive after a period of rest. This taking up depends very much on the nature of the soil and is accounted for as follows :

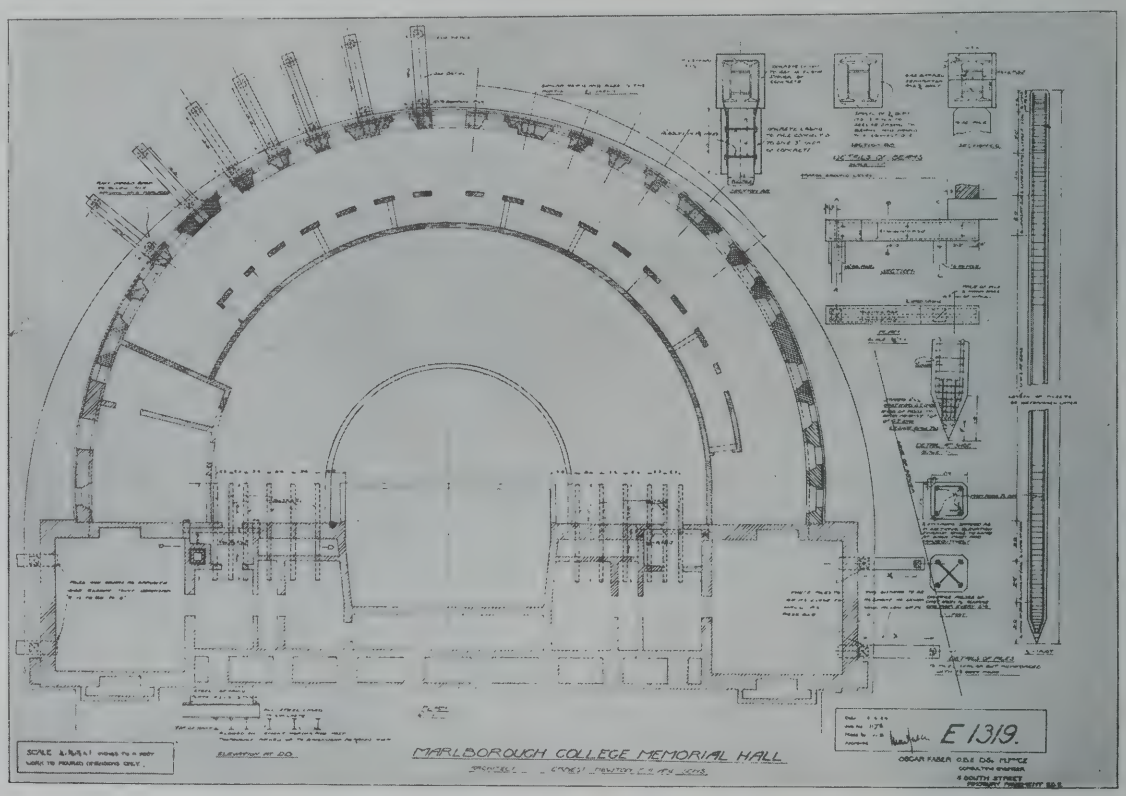


Fig. 15—Marlborough College Memorial Hall

When the pile is first driven the soil immediately surrounding it has its cohesion shattered by the vibration of driving and therefore driving proceeds comparatively easily. After a period of rest the soil is pressed against the pile owing to the hydrostatic pressure existing in the soil and this cohesion is gradually built up again. In other words, the pile sticks to the clay or surrounding earth and this cohesion has to be broken down before further movement of the pile will take place. The whole of this cohesion is available for sup-

porting the pile and is a very large element of the total resistance. This additional cohesion or "take-up" is greatest for blue clay and least for dry sand, and therefore any pile formula which fails to take into account the nature of the material through which the pile is driving can obviously only be misleading.

The writer has found it much better to predetermine the length of a pile and its carrying capacity from a consideration of the skin friction or cohesion between the pile and the soil, which with a little experience can be estimated for various soils with considerable accuracy. Where time allows, an actual loading test of a group of 4 piles is highly desirable on important structures, and is the only reliable criterion of their carrying capacity.

Where it is desired to carry foundations down through a waterlogged soil there are in general three good methods. The first is by using bearing piles as already described.

If the foundation at the bottom consists of clay or other impervious material into which steel piles can be driven sufficiently to make a water-tight joint, then a second good method is to drive sheet steel piles all round the foundation and a few feet into the stiff clay at the bottom, when the excavation can be removed, and concrete placed in the ordinary way.

Of the various sections of piles used, that designed by the British Steel Piling Co., which is shown in Fig. 16, is the best for most purposes.

The locking arrangement gives great security against the piles springing apart during driving; and the long passage in the joint for any water to leak through reduces any leakage to a minimum.

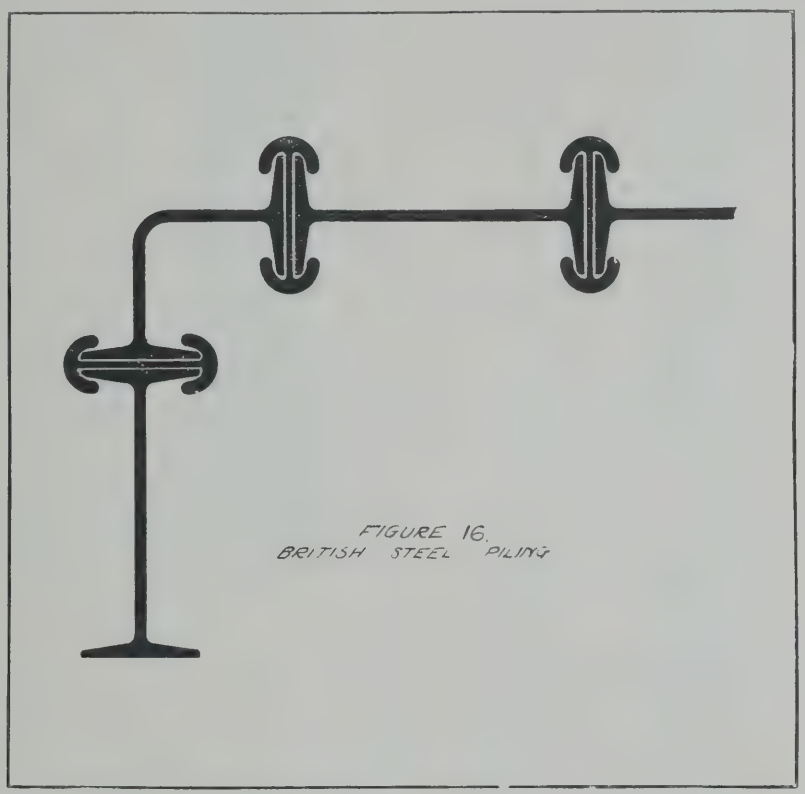
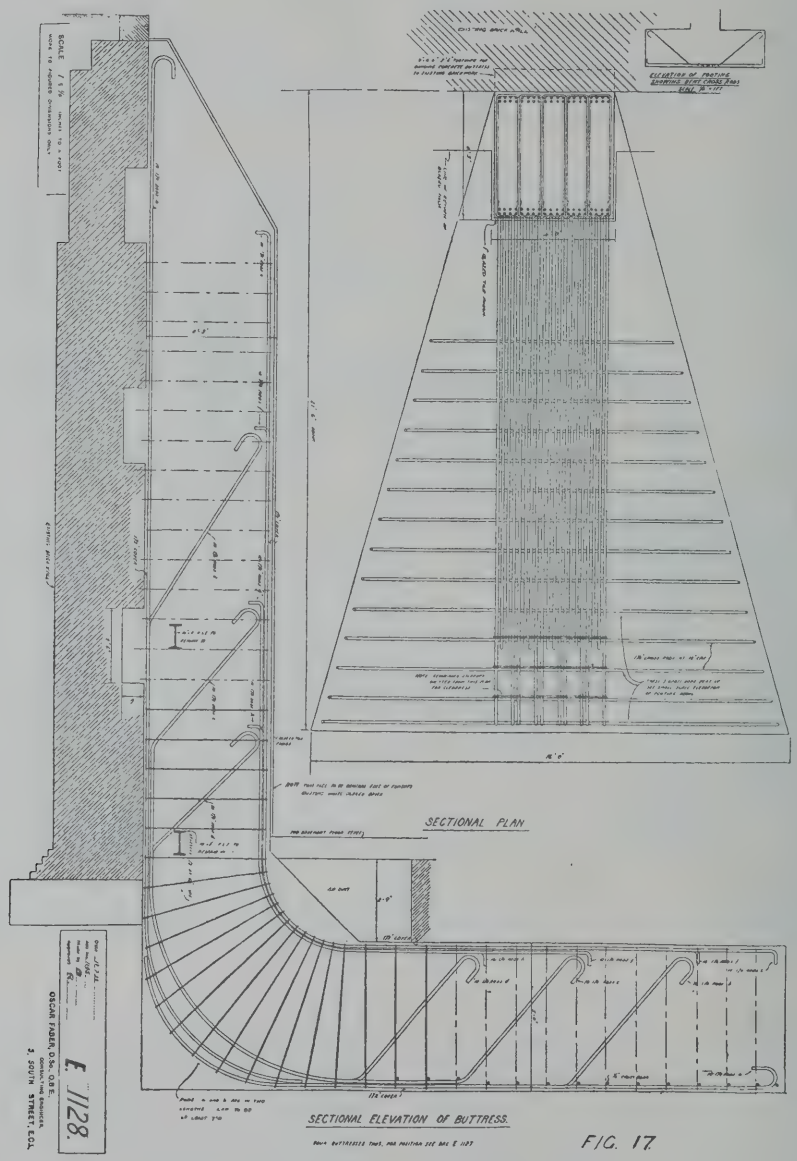


FIGURE 16.
BRITISH STEEL PILING

Such piles are being used successfully for the foundations of Courtaulds' new building in St. Martin's-le-Grand and are proving entirely successful.

Where, however, the foundation is rocky and a water-tight joint cannot be made by sheet piles, then caissons generally provide the best solution. A caisson consists of a box composed either of steel plates or of reinforced concrete, which is

gradually sunk into the ground by weighting it. The caisson has a cutting edge at the bottom and a horizontal diaphragm some 8 feet above the cutting edge. Access to the working chamber below the diaphragm is obtained through tubes extending from the diaphragm to the top and provided with air-locking arrangements. Men are lowered down into the working chamber, from which water is excluded by means of compressed air. The soil is then dug out from under the cutting edge, and sent up to the top in skips through the air-locking tubes. As the caisson sinks additional sections are built on to it on top. When the rock is reached its surface is cleaned up, and concrete is then placed from above so as to completely fill both the working chamber and the space above it.



BRICK RETAINING WALL SUPPORTED BY REINFORCED CONCRETE BUTTRESS

The Federal Reserve Bank in New York had its outer walls constructed of reinforced concrete caissons in this manner, the caissons being 30 feet long and 8 feet wide.

A special feature in connection with this work is that the caissons were lowered down 100 feet on to rock, although the site is bounded by narrow streets with tall and heavy buildings on the other side, which were not disturbed or underpinned during these operations.

In conclusion I would like to refer briefly to a special application of reinforced concrete to the strengthening of a brick retaining wall, a drawing of which will be shown.

A large site had been excavated to a depth of 30 feet approximately, and the surrounding earth, together with the buildings upon it, was being retained by means of a brick wall 3 feet in thickness. At the time when the author was called in the wall was showing signs of overturning owing to the pressure of earth behind it. It was immediately shored to render it safe, and subsequently has been strengthened in a manner which will be described.

In connection with this work the Author formed his opinion, after an examination of the soil, of the pressure on the back of the wall, but desired, for several reasons, to have a check of these pressures if possible, and it was found that the trench for the retaining wall was strutted across by means of horizontal timber struts 7 feet apart in both directions, the sectional area of the struts varying between 7 inches square and 8 inches square.

This, of course, was on those portions of the wall where the dumpling had not yet been removed, and where the struts were still resisting the full horizontal pressure corresponding to their particular depth. It was noticed that the struts had indented themselves to a considerable distance into the horizontal timber walings, and this suggested the means of checking the earth pressure. A particular strut half-way down the wall was found to be $7\frac{1}{2}$ inches square, and the indention to the horizontal timber, which amounted to about $\frac{3}{8}$ inch, was measured. A similar strut and a similar piece of waling were then tested in a testing machine, and it was found that a pressure of about 28,000 lb. was required to produce the same indention of the strut into the waling.

Having regard to the fact that these struts were 7 feet apart in both directions, it was possible to check back and calculate that the earth pressure at this depth must be of the order of $28{,}000 \div 49 = 570$ lb. per square foot. The calculated pressure at that depth by the author's assumed pressure curve came to 630 lb. per square foot, which was considered to be in close agreement.

This was considered of sufficient interest by the author to be recorded, because it is not often that we have opportunities of checking the pressures for which retaining walls need to be designed.

As a matter of interest Fig. 17 is added, showing how the walls were actually strengthened. A reinforced concrete buttress of rather peculiar design was constructed against the inside of the wall at intervals and efficiently bonded to the existing brick walls. Its effect is to increase the leverage of the weight of the wall from about 1 foot to about 15 feet, and is therefore, obviously, extremely effective in supporting the wall against any tentency to overturn.

It will be readily appreciated how extremely economical this method of strengthening the wall was as compared, for example, with the construction of a continuous reinforced concrete wall inside the brick one.

From the point of view of obstruction, the arrangement adopted also proved to be peculiarly convenient, as these buttresses could be placed in certain recesses in the brick wall.

It will be noticed that the buttresses are heavily reinforced, as might be expected, as the pressure on a considerable width of wall was being resisted by a buttress only 4 feet wide, and it was necessary to reduce the dimensions to an absolute minimum with a view to causing as little obstruction as possible.

Actually the composite wall consisting of the ferro-concrete buttress with the brick wall between the buttress is no more expensive than the most economical type of brick or reinforced concrete retaining wall which would be safe to resist the actual pressures experienced.

(*The Discussion which followed Dr. Faber's Paper will be published in the next issue of the Journal.*)

St. Paul's Cathedral

BY WILLIAM DUNN [*F.*]

LATE CONSULTING ENGINEER FOR REINFORCED CONCRETE CONSTRUCTION TO H.M. OFFICE OF WORKS

THE morning papers of 31 December 1924 published a report made by the Commission appointed by the Dean and Chapter to advise upon the condition of the Dome and its supports. I have given a considerable amount of attention and study to St. Paul's Cathedral, and I find myself so much at variance with the conclusions of the Commission that I would like to put my own opinions forward for what they are worth.

Anxiety on the part of those responsible for St. Paul's Cathedral is no new thing. This anxiety of late years has centred round the supports of the Dome—the legs of the piers—which began to fail under the great pressure before the Dome was finished. Repairs were begun to these in Wren's lifetime, and were continued by Flitcroft and Robert Milne during the eighteenth century.

Facing stones were cracked, and what is called " Veneering " was resorted to—the face of cracked stones was cut back for a few inches and a new stone facing put to cover up the failure of the stone behind.

Subsequent surveyors of St. Paul's (Prof. Cockerell, Mr. Penrose and Mr. Somers Clarke) were aware that the piers were in an unsound condition, but nothing was done by them in the way of actual repair, though Mr. Somers Clarke carried out considerable repairs to other parts of the structure.

It was not until Mr. Mervyn Macartney's appointment as successor in the surveyorship to Mr. Somers Clarke in 1906 that the matter was again seriously taken up. He became alarmed at the condition of the piers, and at his suggestion a Commission of Enquiry, consisting of Sir Aston Webb, Messrs. Collcutt, Belcher and Macartney —all architects—was called together in 1907. Their report is an interesting document, showing that the Commission explored various possible causes of failure, but kept off the very obvious one of the inherent weakness of the piers under the Dome.

Let us quote a few sentences from their report :—

" The topmost stone of the dome was laid in 1710, the date usually taken as marking the completion of the building, though much work was still going on within and without, and much was left undone.

" But before this date, in December 1709, an entry in the Cathedral pay-book records 'work done in repairing flaws occasioned by the pressure, making good such stones as could be left remaining with lead and plaster, being the eight Leggs of the Dome and in the inside of the East.W.N., and South cross being above 1,500 foot in perifery.' This repairing continues in the two months following. Similar entries are found during the first six months of 1716, where one of the legs of the Dome is mentioned as having been repaired with ' 42 tun of Portland stone,' and again in 1772, when repairs to the South-East leg of the Dome are specified. One of Wren's original drawings in the Cathedral Library is a quarter plan of the Dome area on which the great south-east pier is noted as ' the peer which has been repaired ' and the work was done by Edward Strong, who succeeded his father and uncle as Clerk of Works."

This Commission devotes most of its report to consideration of the settlement of the ground from various causes, and seems to consider all the trouble had arisen from that settlement. They came to the conclusion " that the fractures then found were of long standing, and did not give ground for special anxiety." " We have seen no evidence of crushing as a result of the various settlements."

They, however, had in another paragraph of their report noted " that the settlements of the fabric which occurred during the building of the church, and particularly the dome, have continued in some degree to the present day."

This Commission concluded that " there is no immediate necessity for any extensive remedial measures to be undertaken."

Their report finishes with a eulogium on Sir Christopher Wren :—

" In conclusion we must pay a tribute to the wonderful constructive ability of Sir Christopher Wren. That a building of the magnitude and weight of St. Paul's should have survived the altered conditions of the subsoil without more serious damage is an evidence of his masterly skill and ingenuity, for he provided against every danger known to his time."

Nothing is said—possibly because they knew nothing of the interior of the piers, or because they were misled by a statement in the *Parentalia*—of any original weak construction in the legs of the Dome. Here is that statement, quoted in the Commission's report :—

" The huge and massive pillars of the Dome (which is one hundred and eight feet in diameter within the walls) brought to the same height, *the work being totally wrought of large Portland stone*."

As we shall see, this was a very misleading statement.

After this report was received, nothing was done until Sir Francis Fox, an eminent engineer who had, one might say, specialised in cathedral repairs, was introduced by Canon Alexander. Sir Francis took an exceedingly grave view of the condition of things, and accordingly a second Commission was formed in 1913, consisting of Sir Francis himself and Messrs. Darwen, Davison, Caröe and Macartney ; the last two being architects and the others engineers.

This Commission failed to agree and presented a majority and a minority report. The former, signed by Sir Francis Fox, Macartney and Davison, found that " the piers of the dome were in a more or less unsound condition so that some of the stones are overweighted and have cracked." They considered " the state of affairs too serious to allow of delay " and recommended the grouting up of the main piers and masonry generally and as a measure of safety, the shoring up of the arches of the Dome, and the strutting of the piers. The minority report, signed by Caröe and Darwen, contradicted many

of the statements made by the majority; these last named gentlemen complained that the necessary time and facilities had not been given for a careful examination of the structure and that a properly considered recommendation could not be given.

After the receipt of these two reports, the Archbishop of Canterbury and others requested Messrs. Caröe and Macartney to undertake a more thorough investigation. After they had done so, Mr. Caröe took a more serious view of things and agreed with Mr. Macartney upon certain works of repair which the surveyor subsequently carried out to the two South transept piers.

Meanwhile certain grouting experiments had been made on one of the Crypt piers, but these were not altogether satisfactory, the cement becoming air-locked and refusing to go in.

Sir Francis Fox, finding that his recommendations were not being carried out, and no doubt moved thereto by a high sense of public duty, wrote to the King's Private Secretary in 1921 stating that the building was unsafe; and this resulted in the calling together of yet another—the third—Commission in 1921. This consisted of Sir Aston Webb, an architect, and three engineers, Messrs. Humphreys, Mott and Trench, eminent in their profession as municipal, tube and other railway engineers, Mr. Macartney having also a seat on the Board, as the phrase goes.

The question at issue being a scientific and not an artistic matter, no one will find fault with those who are not overborne by great names, but in the true scientific spirit question all things. Without that spirit, we should have made no advance on the classical mechanics of Newton or the geometry of Euclid. Even in this controversy as to St. Paul's there has been too much deference paid to Sir Christopher Wren himself. Great architect and great scientist as he was, he was without the accumulated experience of the last two centuries, without our instruments for testing materials, or our long records; and we can no more blame him for not being abreast of modern methods than we can blame his great contemporary, Newton, for not anticipating Einstein. All kinds of secondary causes were suggested and debated before we could admit that Wren—the glory of English architecture—could have built his piers which carry the Dome in a way which the speculating builder of our own times would shrink from. Yet such is the case. The drainage of the subsoil, the construction of sewers, the settlements of the building, the vibration of motor traffic, and the action of the sun, all possibly and probably contributing to the result, were discussed before the main and sufficient cause was even whispered: that the piers were too weak to bear the load upon them.

The Cathedral accounts, as we have shown, indicate this clearly enough. But through the intervening years all concerned, down to those Commissions, seemed under the spell of Wren's name, and to have hoped against hope that because the work had stood so long a little patching up would enable it to stand for as long again—as if a little patching up would enable us to prolong the life of a man of seventy to one hundred and forty years.

We know beyond any doubt that these piers are *not* "*totally wrought of large Portland stone*"; on the contrary the square Portland stone we see is but a thin badly built shell enclosing a core, or hearting, of stone debris of various kinds—Portland, Kentish rag, purbeck marble, indurated chalk, etc., much of which was got from the ruins of the older church destroyed in the Great Fire—and all embedded in lime mortar.

Sir Francis Fox, in his "Reminiscences" (if the present writer's memory is correct) compared the piers to a box in which a child has thrown his toys in disorder. This hearting, in fact, is like a very badly made concrete in which the aggregate of stone is not graded into the proper sizes, and the weakest cementing matter has been used. Even the projecting foundations or footings are of this same weak, uncoursed rubble or concrete, with a thin deceptive casing of stone. When the first Commission says in its report of 1907 that they "found the footings were formed of three twelve-inch courses of stone slabs" they were sadly mistaken.

We have no tests of what this material—this hearting which forms the main body of the piers—could safely bear, for the simple reason that no one would to-day propose such a method of construction for any weight-carrying structure.

Examinations of this hearting with its lime mortar in sometimes excessive thickness makes one doubt if the proper safe load should exceed five tons per square foot, such as we would put on moderately well-built brick piers. Certainly it would not be as great as the maximum load permitted by law on blue bricks in cement mortar, which is 12 tons per sq. ft.

Yet these piers at the level of the nave floor have to sustain an average load over their whole sectional area of more than 15 tons per sq. ft. This is the load due to the weights of the superstructure alone—accurately determined by Mr. Drower in 1914—and is on the most favourable assumption that it is uniformly distributed over all the area of the piers. As we shall see, the actual intensity of the loading very greatly exceeds this figure, which takes no account of the effect of wind, or of the unequal distribution of the loading.

We must remember that Sir Christopher Wren had very little experience in building when he was entrusted with this great work, and that the mediæval custom of building piers was to fill in behind the stone facing with uncoursed rubble. It would also seem, both from his drawings still extant and from the work itself, that the final dimensions and arrangements of the dome were not absolutely fixed before the work was started.

Now this core or hearting being so weak, it was also much more easily compressed by a load than the Portland stone casing, which varies in thickness from something less than a foot upwards. It follows that a much greater intensity of load—a much greater load per square foot—is taken by the less compressible stone.

Mr. Mervyn Macartney has for the first time shown us by a model and by drawings the extraordinarily intricate construction employed by Wren in the dome, the drum, and piers supporting it. Until these were prepared it was almost impossible for anyone—however skilled—to understand the relation of the parts or the various devices

employed to distibute the loading on the piers and arches. As it is, this is such that it passes the skill of man to determine the exact distribution of the loads. Structures in steel with a few redundant members are simple problems compared to what this presents.

Fortunately we are not left to calculation entirely to find what is the intensity of stress in the most important parts ; nor is it necessary here to discuss the exact intensity of the stresses.

It is quite sufficient to observe in the work itself, that these stresses are too much for the material and construction. The hearting of this lime concrete has been split up by cracks, chiefly vertical, and the stone facing or shell has been broken in many places ; the stones cracking and large parts spalling off. This, be it remembered, is not altogether a new thing, only occurring after the building of deep sewers or the advent of motor traffic. It began as soon as the dome was up, and that it is still going on, gradually failing, is shown by the fractures of the stone casing, which fractures are in some cases clean and quite new.

It needs no intricacy of abstruse calculations, no eminence in the profession of engineering, to draw the plain deduction, that the piers are too weak.

Now, efforts have been directed to strengthen the piers by the use of the grouting machine—a machine which forces liquid cement into the cracks, and in suitable cases has been successful in so strengthening old walls and pillars that they last for years afterwards.

Unfortunately, experiments with the piers of St. Paul's in that manner have not been successful. Owing to the quantity of lime mortar, plaster of Paris, etc., soluble in water, it is not possible to drench the cracks thoroughly before the injection of cement grout, which drenching is, if not an essential, at least a very desirable, preliminary operation. Then the condition of the piers is such that it is not possible to use any great pressure to force in this grout. In the crypt, too great a pressure was used, with the result that a part of the stone casing was displaced, so that the grouting had to be stopped and the pressure reduced. An excess of pressure in the grouting applied to the main piers above the nave floors, where the failures are so evident, might easily result in an appalling disaster. So the pressure to be used must be kept sufficiently low. Under this last Commission the process of grouting was applied to one of the piers under the dome ; no new thing, as it was being carried out by the surveyor when the Commission was formed three years ago.

But what was the result ? The proper course would be to cut open the pier, and to ascertain how far the grout had penetrated. We are not told in the report if this was done. If the cement was not found close to the surface, is it likely that it would be found in the middle at a distance of five feet back ?

But suppose that the cement grout has penetrated everywhere and filled up all cracks—a large supposition. What then ? We have still a pier with a hearting of irregular stone in lime mortar, split up into irregular large and small parts by cracks filled up with cement grout. Unless the stone casing is taking all the load, the horizontal cracks must be small ; the main cracks being vertical and splitting up the piers into separate columns, the cement in these can have little adhesion to the lime and stone faces. It is therefore difficult to see how the grout can alter the strength of the hearting ; to the present writer it seems impossible.

Let us now suppose—yet another large supposition—that the hearting *is* strengthened very materially. How will this affect the stone casing, which shows the overstress in it by breaking and spalling ? It could only do so by being put under such a pressure as to increase its length, just as a screw-jack relieves pressure on supports when the jack is screwed up. But it is evident that this pressure cannot be applied, and the dangerous stress in the casing must remain.

It is suggested that after the grouting is finished the broken stones should be cut out and replaced by sound stones. When a broken stone is cut out, there is inevitably an increased load on the remaining stones. When the new stone is put in, it is not put in under the pressure which broke the stone it replaces, so that for every stone we replace we get, not a less, but a greater pressure in the remaining part of the casing.

It is no new thing to have buildings come down after centuries of existence. The towers of Chichester and Seville, the Campanile at Venice, were not new buildings, and all evidence points to an increasing failure here. Have we not Sir Francis Fox's opinion as to the danger, and Sir Aston Webb's in an interview given to an evening paper lately ?

The writer believes any such remedies as grouting and replacing stones are quite inadequate—palliatives at best—and can only give a very dangerous and unwarranted confidence. To him it seems that the piers should be rebuilt with proper material capable of carrying the load ; should be in fact reconstructed as described in the *Parentalia*, " the work being totally wrought of large Portland stone." It would, unfortunately, be a difficult and delicate operation, but if it is beyond the skill of our constructors, be they architects, engineers, or builders, it would appear that we must either face the entire reconstruction of the dome and the piers, or wait until the whole collapses.

The third Commission report contemplates an expenditure of some £120,000 to £140,000 in the fond belief that by grouting and replacing broken stone facing, the piers may have a new lease of life. They leave to others the real task which will have to be faced. To my mind it seems a waste of money in the first place, and a serious danger in the second, to follow this policy. Better spend the money on shoring and centering the arches as recommended by the Second Commission ; if this was necessary then it is more so now.

The Wren Society*

THE SOCIETY'S FIRST ANNUAL PUBLICATION

BY SIR REGINALD BLOMFIELD, R.A.

THE first volume of the Wren Society, edited by Messrs. Bolton and Hendry, deals with Wren's drawings in the All Souls' Library, or rather with a small selection of them, including Wren's designs for St. Paul's, made before the fire, the accepted "Warrant" design, and studies and drawings of St. Paul's made during execution. The volume is admirable in form, the reproductions are excellent, except those of the pencil drawings, and the brief introductory note is scholarly and reticent, almost too reticent, for the volume leaves us much where we were in regard to our knowledge of Wren. Few of the drawings are in the All Souls' collection signed by Wren, and those that are, being geometrical drawings, give one little idea of Wren's actual capacity as a draughtsman. The section of the pre-fire design, signed by Wren, 1666, is well drawn, though the detail is commonplace, and indeed is an inaccurate recollection of what Wren had seen in France the year before. The draughtsmanship of the model design (section) made in 1673 is feeble, though the design itself is an immeasurable advance on the 1666 design. There is no evidence to show that the beautiful drawing of a section of St. Peter's at Rome, and of the Duomo, Florence, or any of the free-hand designs, were made by Wren; and my own impression, formed after a careful examination of the All Souls' drawings some twenty-five years ago, was that, in fact, Wren was not a fine draughtsman, as Inigo Jones and the greater Italians were, and that many of these drawings are not by Wren at all, though they were probably made for him. The bent of Wren's genius lay towards the constructional side of architecture, and he probably left his details to the excellent trade craft of his time. Charming as the results often were, they show little individuality beyond that of the period, and I would suggest to the editors that a comparative study of the drawings, with reference to drawings actually signed by Wren, would throw a useful light on Wren's development as an artist.

The other problem that still remains unsolved is, how is it that Wren, who could conceive and carry through the magnificent building of St. Paul's as we have it, could have produced, first, the hopeless design for the completion of old St. Paul's (1666), then the fine "model" design in 1673, then the extraordinary "Warrant" design, and should finally have turned his back on the lot and worked his way through to the design as it is? Still further, one would like to know how Wren was able to shake himself free of the "Warrant" design, which had been formally sanctioned as "very artificiall, proper and usefull." The "model" design is a mature design, far abler than the rather similar plan of J. H. Mansart's Church of the Invalides, begun in 1680; and yet Wren allowed himself to put forward the "Warrant" design. Possibly he was overpowered by the clergy, who, with some reason, found the plan impracticable; but this would not explain the dome and telescope steeple of the "Warrant" design, which could never have been built as Wren designed it. It may have been suggested by a noble patron, but the probable explanation is that, in spite of his immense ability, Wren, who had only taken up architecture some ten years before, did not yet quite know where he was. His active, fertile brain was still feeling its way, still trying to form some manner of his own. He had not yet reached that assured mastery of his art which a few more years of actual practice was to give him. Fortunately, St. Paul's was long in building, and the delay gave Wren that breathing space that he wanted.

The various studies made during the execution of the work are of the greatest interest, because they show how Wren gradually developed his design from tentative beginnings, by constant self-criticism and experiment; and there can be little reason to doubt that the Cathedral as we now have it is very much better than anything shown in the drawings. It is a proof, if it were needed, that the personal and individual touch of the architect is as essential in the art of building as that of the painter or the sculptor in the arts of painting and of sculpture.

The editors refer to another very important source on which they propose to draw for further material in regard to St. Paul's. They might also allow themselves a more liberal text in exegetical criticism. Elmes' catalogue and remarks want careful revision, and the most eloquent panegyric is useless in the absence of facts. The best service that can be rendered to the greatest of English architects is to ascertain the facts of his career, and place them in their right relationship without fear or favour.

* *The Wren Society*: Vol. I. Oxford University Press, 1924.

Reviews

CONTEMPORARY JOURNALS.

AMERICA.

Architecture, November 1924. There is much that is of interest in this sumptious American journal. The article by Mr. Folger Johnson on "Architectural Glimpses in Old Dalmatia" is illustrated by excellent photographs, which show the variety and interest of the work in the Eastern Adriatic. Of a very different type is the account, with photographs and plans, of the Chicago Temple Building. This, it is claimed, is "the embodiment of new thought in modern church architecture, a combination of office and church building." Externally it is a building of the usual sky-scraper type of about twenty storeys above the ground floor, which is devoted to shop fronts; but the whole is surmounted by an elaborate Gothic spire. On the ground floor behind the shops the space is devoted to a large auditorium lavishly decorated in a free Perpendicular manner, and the vestibule and lobby have also an ecclesiastical character. The upper part of the building is intended for use as offices. A further section of the journal is devoted to the Congressional Country Club, Washington, D.C.

The Architectural Forum. November 1924. Apartment Hotel Reference Number. This issue, which is well illustrated, deals with every aspect, economic, constructional, mechanical and decorative, of the modern apartment hotel. These hotels, which may be termed super-service flats, are extremely luxurious and show many of the latest labour-saving devices.

December issue. A good example of the American use of the Italian Villa style is to be seen in the illustrations of the New Arrowhead Inn, a restaurant de luxe recently completed just outside New York. In complete contrast to the simplicity and informality of this building is that described in the following article, dealing with the great Roosevelt Hotel, by Geo. B. Post and Sons. This great block, containing some 1,100 rooms, is the first large new York hotel built since the Zoning Law, which necessitated considerable setbacks in the upper part. The journal also includes several illustrations of American domestic work, and a series of Renaissance doorways, chiefly from Genoa.

The Architect. December 1924. This magazine contains many beautiful examples of domestic work. Among the larger buildings illustrated are the Federal Bank Building at Cleveland, showing a strong Florentine influence; and the American Radiator Building, New York, with its interesting and on the whole successful attempt to bring romance into the modern sky-scraper.

FRANCE.

L'Architecture. 25 November 1924. The two most prominent articles in this number are an account by A. Louvet of the International Congress on Architectural Education, held in London in the summer, and the speech of Paul Léon, directeur des Beaux Arts, made at the Congress. There is also an illustrated account of a villa at St. Adrien, near Rouen, a picturesque little building of brick and half-timber work, showing considerable ingenuity in planning.

Issue of 10 December. The greater part of this number is devoted to an article on the seventeenth Autumn Salon. The majority of the illustrations are of interior decorative work, but there are also drawings of a proposed National Academy of Fine Arts at Amsterdam, and of various smaller buildings. A most exhaustive study, by M. Pillet, of the temple of Ammon at Karnak should prove of considerable interest to archæologists.

L'Architecture Vivante. This interesting quarterly publication, which is now starting its second year, contains a collection of magnificent plates showing notable modern buildings, mainly European. The current number gives photographs, with details, of work in Paris and Amsterdam, and of a proposed sky-scraper for the *Chicago Tribune*.

SPAIN.

Arquitectura Española. This quarterly magazine is arranged in parallel columns of English and Spanish, and is published with the special intention of interesting English-speaking peoples in Spanish architecture. The most important article is on decorative art in Toledo, that curious town where the East does indeed meet the West, but there are several plates of contemporary competition work showing the high quality of Spanish draughtsmanship.

GERMAN.

Wasmuth's Monats Hefte fur Baukunst. No. 556. 1924. Considerable space is devoted to an illustrated article on alterations and additions to existing buildings in Berlin, but a further and possibly more interesting section is given up to engineering work. The illustrations of the Rheinische Metallwaren-und-Maschinenfabrik at Düsseldorf-Derendorf are particularly interesting.

M. Dickens Whinney.

A HUNDRED YEARS OF PORTLAND CEMENT, 1824–1924. *By A. C. Davis.* [*Concrete Publications, Ltd.*]

The History of the Portland Cement Industry in all its varied phases, besides the interest which directly attaches to the development of one of the most important of the many complicated ingredients of modern buildings, serves as a fairly accurate index to the change that has come over building methods in recent times. The Scientist, and particularly the Chemist, have come to play an important part in the preparation and testing of modern materials; and this comparatively recent development is nowhere better seen than in the growth of the Cement Industry. The volume now presented to the public seems therefore to be in no way out of place or uncalled for—setting forth, as it does, both the historical and scientific sides of the story and comparing the standards and regulations in force in different countries to control the properties of the material supplied to the consumer.

The aim has evidently been to produce a complete treatise on the subject of Portland Cement which is probably at the height of its development, and a large measure of success has certainly been attained. The impression produced, however, in places is that the book has been written in somewhat piecemeal fashion, and the subsequent fusion of the component parts seems hardly sufficiently performed. A little fuller treatment of the subject of cement testing with illustrations of the apparatus employed might have added to the interest and value of the work; but, generally speaking, there is not much ground for adverse criticism of the book, which is, moreover, clearly printed and tastefully produced.

John H. Markham [*F.*].

The Late Sir William Emerson, Past President

BY H. D. SEARLES-WOOD [*F.*].

Sir William Emerson, who died on 26 December, was one of the great mid-Victorian architects who did so much to establish the position of the Royal Institute of British Architects in the nineteenth century. He had a distinguished career in India and in England, and his dignified presence gave great distinction to the various offices he held in the Institute.

Sir William Emerson was born in 1843 at Whetstone, Middlesex ; he was a pupil of William Burges, A.R.A., and was educated at King's College. He went to India in 1864, when he was twenty-one years of age, and built several churches, the Bombay markets, and several other buildings. On his return to England he designed for the Government of India the Allahabad University, which was carried out by the Royal Engineers. He also designed the cathedral for the Lucknow Diocese and the Bhownugger Hospital, and designed a large palace for the late Maharajah of Bhownugger and the Victoria Memorial for India in Calcutta. In England he was architect of St. Mary's Church, Brighton, and Hamilton House, Victoria Embankment. His design was placed first in the competition for Liverpool Cathedral.

Sir William Emerson was elected Associate of the Royal Institute of British Architects in 1866 and Fellow in 1873. He was Hon. Secretary from 1893-1899, and President from 1899-1902. He received the honour of knighthood in 1902. The following is a list of the offices held by him in the Institute :—

Member of Council, 1886-1893 ; Chairman of the Board of Examiners, 1902-1905 ; Member of the Art Standing Committee, 1886-1890 and 1903-1905 (Vice-Chairman 1903-4) ; Member of Prizes and Studentships Committee, 1885-1893 and 1899-1911 ; Member of the Board of Professional Defence, 1904-5 ; Member of the Seventh International Congress of Architects (General Committee), 1905-6.

BY MAURICE B. ADAMS [*F.*].

I willingly respond to the Editor's request and in an informal personal way write an additional obituary about our late President, Sir William Emerson, for the Institute JOURNAL. While thus complying, it is my desire to avoid giving egotistic references on the one hand and enumerating on the other those particulars of his life and works which may be furnished by other friends. Sir William Emerson was knighted in 1902 and by this title is familiar now to most of our members. He entered into my life when he was about twenty-five, therefore my senior by some six years. His offices were at No. 1 Westminster Chambers, then only recently erected. He had served two terms of pupilage. First, with Habershon and Pite in Bloomsbury Square, and secondly with William Burges in Buckingham Street, Adelphi, before he commenced practice in Bombay. He immediately became very busy, having influential connections in India. His first important undertaking consisted in erecting big premises for Messrs. Treacher, besides the Takhtsingji Hospital, Shavnagar, which was followed by the Muir College and the University of Allahabad, as well as All Saints' Cathedral, Cannington, near Allahabad. It will be remembered that his master, Wm. Burges, had some time before designed the School of Art at Bombay, marked by his particular mediæval mannerisms in the style by which he became famous. Emerson, an ever true and devoted pupil, carefully adhered to this phase of French Gothic when at the outset of his career he built his charming little Church at Girgaum, near Bombay. I remember he was very proud of this building. The palace for the Maharajah of Bhownugger followed later, in which Indian forms and precedents were ingeniously intermingled with European mediævalisms. The detail drawings for some of these larger buildings were being worked out in my time as an improver in his office, which occurred before my own articles had expired owing to the sudden death of my master, Horatio Nelson Goulty, of Brighton. His partner, Mr. John George Gibbins, F.R.I.B.A., introduced me to Sir William Emerson.

The second Emersonian episode marking our long acquaintanceship occurred in 1886, when Sir Arthur Blomfield, A.R.A., Sir William Emerson and Arthur Cates signed my nomination papers for the Fellowship of the Institute. A rival journalist sought to prevent my election, but the attempt failed, as all three of my sponsors refused to budge and stood their ground. I have not alluded to this affair before in print, and only mention the matter now to show how true a friend I had in Sir William Emerson.

The third circumstance to be named is distinguished by a wider interest. It happened in 1902, at the time of Sir William Emerson's Presidentship of the Royal Architectural Museum, with which I was connected for twenty-six years as Honorary Secretary. It may be remembered by some that our School of Art had become so successful that the classes brought in an average income of £2,000 a year, though the subscriptions to the Museum had declined meanwhile. The Architectural Association was hampered by its cramped quarters in Great Marlborough Street, which had long been inadequate for its increasing activities. Funds were lacking for the acquisition of suitable premises in an accessible situation. It was at this juncture my privilege to propose to the Council of the Royal Architectural Museum that our buildings in Tufton Street, Westminster, might be handed over as a free gift to the Architectural Association. This was done as everybody knows. Sir William Emerson supported the proposal. Without his co-operation the scheme would have been impracticable. Surely this has been forgotten, as the official notice of his death printed in the current issue of the *Architectural Association Journal* makes no mention of his good offices in this affair.

Sir William Emerson, years ago, erected " Little Sutton " in Chiswick for his own use. The house was set in beautiful grounds (near the Duke of Devonshire's Park) containing some enormous cedars, and was inspired by the decorative ideals realized by William Burges in his house in Melbury Road, Holland Park. Sir William was the kindest of hosts, and took great pleasure in showing the beauties of his home, which occupied the site of a house and gardens which existed before the time of Cromwell. Part of the stables and outbuildings he retained. Among the mural enrichments he used tiles made to his design at the School of Art, Bombay. Over the fireplace in the hall, set under an arch, was a bronze figure of Orpheus, having a background of mosaic. The decorations of the drawing room illustrated Chaucer's " House of Fame." The chimney piece, built of alabaster and Caen stone, enshrined a castle set upon a rock of glass in representation of ice. Various figures mentioned in the poem were carved in half round relief. The frieze round the apartment had typical figures illustrative of " Fame." " Little Sutton " exists no longer and the gardens have given place to streets and villas. The house was pulled down to make a widened thoroughfare.

SIR WILLIAM EMERSON'S PRINCIPAL WORKS.

Sir William Emerson built the Bombay markets and several churches in India, and on returning to England he designed, for the Government of India, the Allahabad University ; he also designed the Cathedral of Lucknow, a large palace for the late Maharajah of Bhownuggur and the Takhtsingji Hospital at Bhownuggur. He won the first competition for Liverpool Cathedral in competition with Bodley and Garner and the late James Brooks, but the site for the cathedral was ultimately changed and the competition abandoned. Sir William was commissioned to design the Victoria Memorial Hall at Calcutta, the foundation stone of which was laid by King George V, when Prince of Wales, on 4 January 1906, and which was formally opened by the present Prince of Wales in 1921.

He designed in England St. Mary's Church at Brighton, Hamilton House on the Victoria Embankment and the New Royal Caledonian Asylum, and numerous private houses. He was one of the architects selected to compete in 1891 for the completion of the Victoria and Albert Museum.

Correspondence

THE LATE MR. PAUL WATERHOUSE.

To the Editor, JOURNAL, R.I.B.A.

As a member of the Defence League I should like to put on record the way in which Mr. Paul Waterhouse held the balance between the two parties.

Early in the movement Mr. Waterhouse wrote to me and asked me to call on him and state the case from our point of view. He gave me a very patient hearing, and discussed the matter in an absolutely unbiased way. I told him that as far as I was concerned, I was only out to protect the value of the qualification which our members had obtained by passing the examinations, in which I had taken an active part ever since they had been instituted, and he told me he had every sympathy with this.

I should also like to bear testimony to the valuable work of Mr. Waterhouse in connection with the Board of Education in investigating and reporting on the work in the various schools of architecture.

We were both interested in music, and I value very highly a letter he wrote me in criticising some church music I sent him, and he was good enough to lend me a copy of the Yattenden Hymnal, to which his father had contributed some beautiful compositions.

H. D. SEARLES-WOOD [*F.*]

9, Old Square, Lincoln's Inn, W.C.
20 January 1925.

To the Editor, JOURNAL R.I.B.A.

DEAR SIR,—Letters in your columns and elsewhere have left no doubt in the public mind as to the loss sustained by the Royal Institute and by architects generally through the passing of Paul Waterhouse. These tributes have very properly come from those who were privileged to rank in the circle of his intimates. A repetition of such eulogies by anyone outside this circle would be presumption, but if I may venture to speak for those who could only call themselves acquaintances and were associated with him in a minor capacity in his Institute work, I believe that I shall be voicing their feelings by saying that the loss comes home as that of a close personal friend. It must be seldom indeed that a body of mourners, including so many claiming but very slight ties, find themselves so deeply moved as during that simple graveside service in which we were allowed to take part.—I am, Sir, yours

ALAN E. MUNBY [*F*]

ST. PAUL'S CATHEDRAL.

19 *January* 1925.

To the Editor, JOURNAL, R.I.B.A.

SIR,—In connection with the recent celebration of the bicentenary of Sir Christopher Wren, the Royal Institute of British Architects published a book on Wren and his work (including St. Paul's Cathedral), written by contributors, each intimately acquainted with the aspect with which he dealt.

As the profits of the sale are devoted to the St. Paul's Preservation Fund, possibly many people might consider that a pleasant way to help the fund would be to obtain this attractive and well-illustrated record, of which the title is *Sir Christopher Wren Memorial Volume*: 1723–1923. The sale of only 1,000 copies of the five guineas edition would enable the R.I.B.A. to hand over a sum of 2,000 guineas, to be acknowledged in *The Times* list in the name of each purchaser as a subscriber of two guineas.

The price is £5 5s., and orders, enclosing remittance, should be sent to the Librarian, R.I.B.A., 9 Conduit Street, London, W.1.—Yours truly,

J. ALFRED GOTCH,
President R.I.B.A.

61, *South Molton Street, W.*
January 9, 1925.

To the Editor, JOURNAL R.I.B.A.

SIR,—The correspondence which has recently appeared in the Press with reference to Sir Francis Fox's warning in 1912, makes one or two comments desirable in order to avoid the public, who are deeply interested in the safety of the Cathedral, being misled as to the real position with regard to the piers. Sir Francis Fox's general estimate of the dangerous condition of the piers was undoubtedly right. His assumption that this could be remedied by grouting must have been made under the impression that the piers were composed of solid masonry. It is known to-day that the interior of the piers is composed of rubble. No grouting by any scientific process known to man could restore solidity to these piers in their present condition. May I go a little further and say without offence to a great sister profession, that St. Paul's Cathedral was erected by the combined skill of the architect and the builder, and it is only by the combined skill of the architect and the builder that it can be preserved to-day.

If Sir Christopher Wren had had at his command an adequate supply of Portland stone, these piers would have been built solid in that material, and we should not now be trembling for the safety of this great Cathedral.

The only remedy to-day is, I am persuaded, and architects generally will agree, to replace these untrustworthy piers by piers of solid Portland stone, and whatever the cost, and however great the difficulty, we shall be unworthy trustees of one of the world's greatest monuments if we refuse the one, or shirk the other.—Yours faithfully,

EDMUND W. WIMPERIS [*F.*].

ORIENTATION OF WESTMINSTER.

70A, *Basinghall Street, London, E.C.2.*
13 *January* 1925.

To the Editor, JOURNAL R.I.B.A.

DEAR SIR,—Can anything be done to remove the widespread misapprehension that appears to exist as to the points of the compass when speaking of the Westminster district?

Not long ago an eminent member, writing in the JOURNAL, referred to the "North" front of the County Hall (an error to which I drew attention at the time); I see repeated allusions in the public press to the "South" end of Westminster Bridge; and according to the JOURNAL of the 10th inst., Lord Newton, speaking at a recent dinner of the Architecture Club, referred (if correctly reported) to the "South" side of Parliament Street.

The proximity of the Abbey and St. Margaret's Church, which are correctly orientated, should enable any observer to satisfy himself as to the facts, without reference to a map.—Yours faithfully,

J. CHARLES BOURNE, *Licentiate*.

MR. LISHMAN'S WATER COLOUR DRAWINGS.

Architects often seek relaxation in drawing in water colours, but it is only occasionally that their works are seen at exhibitions. Sir Ernest George achieved great distinction in this medium and he was a regular exhibitor at the Royal Academy Summer Exhibition; Mr. Alfred Waterhouse was also very happy in his water colour drawings; Mr. Rickards, a few years before his death, began to sketch in water colours, but these never equalled his masterly pencil and pen drawings; the exhibition of Mr. Collcutt's drawings in the Institute galleries recently came as a surprise to many of his friends, who were not aware of his skill in this direction. Mr. Guy Dawber and Mr. Edgar Wood's drawings are well known, and Mr. Alfred B. Yeates has his niche amongst contemporary artists.

But apart from Sir Ernest George it is rarely that an architect ventures on a one man show of water colours. Mr. Frank Lishman, the late consulting architect to the United Provinces of India, is doing so at the Walker Galleries, Bond Street, and his courage, we think, is justified by the event. He has on exhibition over eighty drawings which may vary a little in quality but which, as a whole, indicate the work of an accomplished artist who is not limited to any technical formula but adapts his method of treatment to his type of subject. The majority of his

drawings depict scenes in the United Provinces, and if we look at his charming drawing, with the white mausoleum, looking like a splendid palace, of the Taj Mahal, placed in its formal garden with its decorative trees, and then look at his bathing festival scene on the Ganges, we realise the artist's gift for decorative and formalistic, as well as purely impressionistic treatment of his subjects. In his Indian drawings we have depicted many scenes on the Ganges, numerous buildings, occasional street views, landscapes showing the Himalayas in the distance, and other subjects which appealed to him during his twelve years' residence in the United Provinces, all drawn with skill and an appreciation of picturesque effect.

From India we may follow Mr. Lishman to Italy and France. We remember especially in his Italian drawings his views of the Ducal Palace (one of his best drawings at the exhibition), two gay views of the Rialto at night time, and a Salute drawn from a point of view, the lower reaches of the Canal, which is rarely attempted by artists in depicting the most picturesque church in the world. Scenes at Montepulciano and San Gimignano, painted under wintry skies, and "The Quirinale at Rome," are drawings which also remain in the memory. Amongst his French drawings the most attractive is his "Spring Morning in Paris," a river view which takes in the Pont Alexandre Trois, and the embankments on each side lined with their rows of trees not yet bursting into leaf, and a glimpse of the Grand Palais on the right. In this drawing Mr. Lishman is particularly successful in representing the clear, crisp atmosphere of Paris on a spring morning, an atmosphere which contributes so largely to the spirit of gaiety which affects Parisians and visitors to Paris.

Mr. Lishman has also at the exhibition fourteen views of London which include the "British Museum Extensions," "In St. Paul's Garden," "Limehouse Basin," "Cannon Street," "Chancery Lane" (during the building of the Records office) and the "Last of the Quadrant," interesting drawings which show London in its transitory phase of the past ten years or so.

THE ANNUAL CONVENTION OF THE AMERICAN INSTITUTE OF ARCHITECTS.

The President of the Royal Institute of British Architects desires to bring to the notice of all members of the R.I.B.A. and of the Allied Societies the following letter which he has just had the pleasure of receiving from the President of the American Institute of Architects :

The American Institute of Architects,
Washington, D.C.
28 *November* 1924.

Dear Sir,—The American Institute of Architects extends to you and all the members of your organisation a cordial invitation to attend the 58th Annual Convention of the Institute. The Convention will occur in New York City, 20 to 24 April 1925. In conjunction with the Convention an Architectural Exhibition will be held from 20 April to 2 May.

The Architectural League, painters and sculptors, landscape men and town planners, and, in fact, also the building industry, are joining hands with the Institute to arrange an "Exposition of Architecture and the Allied Arts," which promises to be unique. Our brother architects of other countries we hope will be interested to have some of their best work represented and to have some of their ablest members present.

Following this formal invitation it is our desire, if it please you, that further detailed information shall be sent you regarding the Convention programme and the Exhibition as well.

Hoping that we may have the privilege of welcoming you and other representatives of your society, I beg to subscribe myself,—Faithfully yours,

(Signed) D. Everett Waid,
President.

J. Alfred Gotch, Esq., F.S.A.,
President R.I.B.A.

It is hoped that a substantial number of British Architects will be able to take advantage of this most welcome invitation, and that they will in due course send their names to the Secretary of the R.I.B.A. for transmission to New York.

In connection with the invitation received from the American Institute of Architects for members of the R.I.B.A. to attend the 58th Annual Convention to be held in New York 20 to 24 April, the following particulars with regard to steamship sailings may be of interest to intending visitors. (See Journal, p. 154, 10 January.)

The Cunard s.s. *Mauretania* will sail from Southampton and the s.s. *Laconia* will sail from Liverpool on 11 April. The minimum single passage rates for these steamers in April are as follows :—

s.s. *Mauretania* ..	£58 15s.	Saloon.
	£34 os.	Second class.
s.s. *Laconia* ..	£45 10s.	Saloon.
	£31 os.	Second class.

The White Star s.s. *Olympic* and s.s. *Homeric* will sail from Southampton on 8 and 15 April respectively,

In addition to passage rates the United States Head Tax of £2 per passenger is also payable, but this can be reclaimed provided the passengers leave the States within sixty days.

A slight saving of tax can also be effected if passengers book their return passage before leaving on the westward journey.

Arrangements will be made by the R.I.B.A. with the steamship companies for the special reservation of accommodation on any of the above steamers provided early intimation is given to the Secretary R.I.B.A. by members who intend to join the party.

Ian MacAlister,
Secretary R.I.B.A.

Thames Bridges

A deputation consisting of representatives of the R.I.B.A., the Town Planning Institute, the London Society, and the Architecture Club was received on the 19th inst. by the Special Committee of the London County Council, who are considering the problem of the bridges over the Thames. The members of the deputation were Sir Banister Fletcher and Mr. L. H. Bucknell, representing the Royal Institute of British Architects ; Lord Crawford and Balcarres, Sir William Davison, M.P., and Mr. D. Barclay Niven, representing the London Society ; Professor S. D. Adshead and Mr. W. R. Davidge, representing the Town Planning Institute ; and Mr. E. Vincent Harris and Mr. E. G. Culpin, representing the Architecture Club. Mr. Ronald Norman, chairman of the Special Committee, presided. The Chairman and Vice-Chairman of the London County Council were present, as were also Sir James Bird, Clerk to the London County Council ; Mr. G. W. Humphreys, Chief Engineer ; and Mr. F. Hunt, Valuer.

The proposals placed before the Committee are printed below.

Lord Crawford, who introduced the deputation, said it was essential that the general traffic problem and the future development of London should be considered simultaneously with the question of the construction or reconstruction of the Thames bridges. The deputation was strongly opposed to the expenditure of a large sum of money on a bridge at St. Paul's. Such a bridge, if carrying any considerable volume of traffic, would seriously interfere with the all-important traffic passing east and west through St. Paul's Churchyard.

Mr. Davidge, speaking on behalf of the deputation, pointed out that, although six new bridges had been constructed across the Thames in the eighteenth century and nine new bridges in the nineteenth century, none had been constructed in the twentieth century, apart from reconstruction of existing bridges. In point of fact, apart from the Tower Bridge, Wandsworth Bridge, and the two iron suspension bridges at Battersea Park, London had exactly the same bridges as in 1831, when the population was less than one-fourth of what it is to-day. The need for new bridges was very considerable, and the essential principle was that such bridges as were constructed should help to divert traffic from the more congested points.

A map, prepared by Mr. Davidge, was submitted to the committee to illustrate the proposals of the deputation.

By-pass roads to divert traffic from the central portion of London, Mr. Davidge proceeded, were in course of construction, particularly on north circular and south circular routes, and it was essential, to render these effective, that new bridges should be constructed at Lots Road and Woolwich. In the latter case an overhead bridge was suggested from the level of Woolwich Common, passing over the river and Albert Docks, reaching ground level at Barking by-pass road. This bridge would be about two miles in length. In the West of London an opportunity existed for the construction of a by-pass road along the line of the West London Extension Railway from Shepherd's Bush to Chelsea, which would have the effect of diverting much of the traffic at present congesting Oxford Circus and Piccadilly. A new bridge at Barnes and further new bridges at Mortlake and Richmond were already under consideration by the Ministry of Transport, and, although these were outside the London County Council area, there was no doubt that the construction of such bridges was essential.

In regard to the L.C.C. area itself, the deputation suggested that the continuation of the Chelsea Embankment to Putney Bridge would afford a valuable relief road to the present congested Fulham Road and King's Road, and it would also afford an opportunity for the construction of a new bridge from West Hill, Wandsworth, to the new embankment at Hurlingham. The rebuilding of Lambeth Bridge was essential, but, in the opinion of the deputation, it was very desirable that the bridges on the west side should be considerably improved so as to divert the traffic south of Victoria Station, instead of congesting the narrow Horseferry Road and turning a fresh volume of traffic into Victoria Street.

The question of the central bridges was then discussed. It was the unanimous opinion of the deputation, Mr. Davidge said, that Charing Cross Bridge was essential, and, as negotiations with the railway company must occupy some time, they urged that these should begin at once, and that meantime a general plan for the development of the south side of the river, including a realignment of the railway system on that side, should be taken into consideration. A new bridge at the eastern end of Aldwych would undoubtedly be necessary eventually, and the opinion of the deputation was that steps should be taken to forward the construction of such a bridge, which would materially assist a decision being reached as to the width of Waterloo Bridge, whether the latter was retained as at present or rebuilt, if such a necessity should arise. The deputation were united in opposition to the proposed St. Paul's Bridge, and they advocated that a general plan should be drawn up for carrying through the improvements which had been suggested. The societies concerned were willing to assist the Council in the preparation of such plans by every means in their power.

The Chairman thanked the deputation for their offer of assistance in preparing a general plan of improvements, and he and the other members of the committee said they were greatly interested in the suggestions which had been put forward. They asked the deputation to indicate what, in their view, was the relative order of importance of the new works they had suggested.

There was a consensus of opinion among the deputation that the bridges which could be constructed with least difficulty were those outside the county, but of those inside the county Charing Cross Bridge should have the earliest consideration. Afterwards the extension of the Chelsea Embankment and the other bridges connected with it could be taken in hand. The reconstruction of Lambeth Bridge, although it would not provide an ideal new route, would be extremely valuable in relieving Westminster Bridge, and it was a scheme that could be effected without much difficulty.

The Chairman expressed appreciation of the suggestions which had been put forward by the deputation. The special committee, he said, were dealing with bridges only ; other committees were concerned with the cognate matters which had been dealt with by the spokesman of the deputation ; but he (the Chairman) would see, however, that the expressions of opinion given on the other matters were conveyed to the appropriate quarters. He added that it would be important to obtain an exact census of the origin and destination of the traffic crossing the existing bridges. When that was available it would be of considerable assistance in determining the exact points at which new bridges were necessary.

THE JOINT COMMITTEE'S MEMORANDUM

† A Memorandum prepared by a Joint Committee of the Royal Institute of British Architects, the London Society, the Town Planning Institute and the Architecture Club for the consideration of the Special Committee on Thames Bridges, London County Council.

[NOTE.—*This Memorandum consists of three statements by*

the Royal Institute of British Architects, the Town Planning Institute, and the London Society, headed A, B, and C respectively. The Architecture Club do not desire to submit a statement.]

A. THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

1. As it must be taken for granted that the problem of Thames bridges with which the London County Council is faced cannot be separated from that of traffic congestion in London generally, it is essential that the two should be considered in conjunction and that every possible measure should be taken to accelerate the investigations on which a comprehensive scheme can be based.

2. It is assumed that the existing condition of Waterloo Bridge has raised the problem of the cross-river traffic between Blackfriars and Vauxhall Bridges in its present acute form. The Royal Institute therefore propose to confine their recommendations in the main to this part of the river only. The problem appears to fall under three heads : Waterloo Bridge itself, the stretch of river between Waterloo and Blackfriars Bridges, and that between Waterloo and Vauxhall Bridges.

3. WATERLOO BRIDGE.—As regards Waterloo Bridge itself, the possibility of underpinning having been referred to the Institution of Civil Engineers, the Royal Institute, while believing that it will be found possible to preserve a structure of such outstanding artistic merit, desire to express their confidence in the judgment of the Institution of Civil Engineers.

Whether the eventual decision be to retain the present bridge, to widen it or to reconstruct it, the conflict between its traffic and that along the Strand is typical of the main difficulty underlying the problem of Thames bridges as a whole, namely, the impinging of the cross-river routes on the great volume of traffic running parallel to the north bank of the Thames. It would be most desirable if in this case a north and south route could be devised at another level from that of the Strand.

4. WATERLOO BRIDGE TO BLACKFRIARS BRIDGE.—The existing inadequate provision for north and south traffic, and the great inconvenience at present experienced during the " rush hours " by workers in the City of London who reside south of the Thames, point to the need for a new bridge at a point near the Temple Station.

The construction of a double-decked bridge at this point is therefore suggested, together with a tram subway from the Embankment under the eastern arm of Aldwych, utilising that in Kingsway and continued northward under Southampton Row. This subway, it is suggested, might pass under Euston Road and the Metropolitan Railway and emerge in Seymour Street. In this way the Camden Town Tramway System may be linked up directly with that of South London by a line crossing the lower deck of the suggested bridge near the Temple Station to the Surrey side and emerging into a road leading to a point in front of the Old Vic Theatre.

Should the Institution of Civil Engineers report in favour of underpinning Waterloo Bridge, and the London County Council decide in favour of that step, it might be found possible to deal with the traffic in this area without widening the latter bridge at all. It could be used for northward traffic only, and the Temple Bridge for southward traffic, and thus a complete circuit would be formed on a line via the Old Vic—Waterloo Road—Waterloo Bridge—Aldwych and southwards over the bridge at the Temple to the Old Vic again.

5. WATERLOO BRIDGE TO VAUXHALL BRIDGE.—Without venturing to advocate any one of the many schemes which have been suggested for a new bridge at Charing Cross, the Royal Institute reiterate their conviction that there is a need for a road bridge at this point. A detailed study of the approaches to such a bridge, both on the north and south sides of the river, is of the utmost importance, and on no account must the traffic which it carries be allowed to debouch upon the Embankment or the Strand. It must be carried either above or below these thoroughfares in order to avoid adding to the present congestion at Charing Cross.

With regard to Lambeth Bridge, it appears essential that the main approach from the west must be south of Victoria Station.

6. ST. PAUL'S BRIDGE.—The attitude adopted in February, 1924, by the R.I.B.A., the Town Planning Institute, the London Society and the Architecture Club with regard to the proposal to build a bridge at a point opposite St. Paul's is unchanged. The reasons for their opposition to this project were widely published at the time. It is not desired to reiterate on this occasion the many objections to it ; but the four societies concerned oppose and will continue to oppose the execution of such a scheme.

7. Finally it is desired to urge the great importance in any bridge scheme of expert architectural treatment in regard to the design of the bridge itself, and of expert planning in regard to its approaches. The traffic which a bridge will attract, the methods to be employed for its disposal, and its effect upon the development of surrounding areas are problems which the skill of the town-planner has set itself to solve. Nor, in regard to the design of the bridge itself, is it enough for the engineer and the architect to work in water-tight compartments, the former concerned only with questions of construction and safety, the latter with those of superficial decoration and too often called upon merely to " ornament " a structural design already complete. A bridge is beautiful only if its artistic form is a true expression of its construction ; and it is therefore essential, if London's bridges of the future are to be worthy of her great river, that æsthetic considerations in their design should be taken into account at the very beginning and should mature, *pari passu*, with the structural.

B. THE TOWN PLANNING INSTITUTE.

The Town Planning Institute have given careful consideration to the question of London Traffic and Thames Bridges, and are of opinion that the provision of new bridges cannot be properly considered apart from the general question of London Development, and they desire respectfully to emphasise the necessity for the preparation of a comprehensive plan, on which the systematic improvement of London can proceed. Such a plan should deal with both town planning and zoning.

They would emphasise that the principles to be adopted should be (*a*) to avoid unnecessary traffic that at present arises through lack of zoning, (*b*) to relieve the existing congested centres and thoroughfares of all except necessary traffic originating or terminating in the immediate locality.

They therefore suggest :—

1. That all through traffic should be as far as possible provided with a by-pass or alternative route.

2. That as the greater part of the existing congestion is due to blocks caused by cross traffic, all important crossing places should either provide (*a*) for circular regulation of traffic, or (*b*) where possible the two streams of traffic should cross at different levels.

Confining their recommendations, however, at this stage, to the question of Thames Bridges, they would point out that from the Tower Bridge to Kingston Bridge, both inclusive, a distance of 21 miles, there are only 16 road bridges, and that owing to the loss of Lambeth Bridge, there are exactly the same number of road bridges across the Thames as existed 50 years ago, when the population was considerably less than half its present size.

The provision of additional road bridges across the Thames is therefore an essential part of a development plan for London.

The new bridges proposed on the Chertsey Road will provide additional bridges at Chiswick and Richmond, but although this will provide a valuable outlet in a south-western direction, it will not appreciably affect the congestion in Central London.

The Town Planning Institute therefore favour the construction of such further new roads, embankments, and bridges as will enable through traffic to proceed to its destination either in the centre or beyond London with the least possible hindrance.

The Town Planning Institute support the following :—

1. The completion and linking up of the north and south circular roads.
2. The extension of Chelsea Embankment to Putney Bridge.
3. The construction of a By-pass south of King Street, Hammersmith, to connect the new Chertsey Road with Fulham Palace Road.
4. The construction of a new road over the District Railway in continuation of the above and connecting with the west end of Cromwell Road.
5. The construction of a new road over the West London Extension Railway from the new Western Avenue at Shepherd's Bush to Battersea and connecting via Clapham Common with the South Circular Road, involving a double deck bridge over the river at Lots Road.
6. A new road from the eastern end of the Great West Road at Chiswick High Road to Barnes Railway Station, with a new bridge about one-sixth mile north-east of Barnes Railway Bridge.
7. A new bridge over the river from West Hill, Wandsworth, to Hurlingham connecting with the new embankment on the north side.
8. A new road from Wandsworth Bridge to Trinity Road, Wandsworth.
9. The rebuilding of Lambeth Bridge, and a new road south of Victoria Station via Page Street, Vincent Square and Warwick Street.
10. A new high level bridge at Woolwich (in preference to a road tunnel) passing over the river and Albert Docks and connecting Woolwich Common with the new Barking By-pass at Becton, reaching ground level at the northern outfall sewer.
11. A new bridge across the Lea at Canning Town and new approaches to the Docks as recommended by the Ministry of Transport.
12. A new road tunnel between Purfleet and Dartford as recommended by the Ministry of Transport.

It will be seen that the above proposals, in addition to the two new bridges and road tunnel already proposed by the Ministry of Transport, will eventually involve the construction of additional embankments and four additional road bridges, as follows :—

1. A double rail and road bridge at Lots Road.
2. A new road bridge at Barnes.
3. A new road bridge at Hurlingham.
4. A high level bridge at Woolwich.
5. The rebuilding of Lambeth Bridge and new approaches on west side.
6. A new road connecting Wandsworth Bridge and Trinity Road.

They also support :—

7. A new bridge at Charing Cross.
8. A new bridge at the eastern end of Aldwych.

C. THE LONDON SOCIETY.

The London Society consider that there are two separate problems for which solutions must be found :—

1. The long distance traffic between the counties lying north and south of the Thames.
2. Cross-river communication for local purposes between North and South London.

With regard to 1, the Society are of opinion that this traffic should be diverted from the London area by the improvement of arterial roads, and the provision of new bridges and tunnels, outside this area. This is an additional and conclusive reason against the project of a bridge at St. Paul's.

With regard to 2, the Society believe that the development of the south side of the Thames (so well commenced by the example of the London County Council) can never be realised until additional and improved communications across the river are provided by the erection of a traffic bridge at Charing Cross in place of the existing railway bridge, and of the new bridge at Lambeth.

The Society are also of opinion that, if possible, Waterloo Bridge should not be altered from its present form, although it may be necessary to have further increased bridge accommodation for the South of London.

We look forward to the complete abolition of railway bridges in the central area and the substitution of electrified under-river communication for railway traffic ; further, for the provision on road bridges of moving platforms for foot passengers, as these are now within the realm of practical engineering.

In our opinion, discussion concerning these Central London Bridges cannot serve any useful purpose unless a plan for the development of London south of the Thames (including proposals for the future of the railways) is considered at the same time. If this is not done, any piecemeal dealing with the problem will only be a palliative for the present situation, without regard to " London of the future."

January, 1925.

VISIT TO THE WALLACE COLLECTION.

On Saturday, the 10th inst., a very interesting visit was made to the above Collection. About 25 members of the R.I.B.A. attended and were at first addressed by Mr. C. H. S. John in the lecture room. In this address he traced briefly the outline of the history of the Wallace Collection through four generations, from the first Marquis of Hertford, born 1718, died 1784, to Sir Richard Wallace, 1818–1890, who arranged Hertford House to hold his treasures. It was presented to the nation by Lady Wallace in 1900.

The visitors were then led to the picture gallery, when Mr. John explained in detail the principal pictures. Mr. Hurst Seager, in proposing a vote of thanks, said they were very much indebted to Mr. John for making examination of the pictures much more interesting than it would otherwise have been. With the recollection of the galleries in all parts of the world he had visited, he could say that the Wallace Collection was one of the best, not only for the wealth of the exhibits which Mr. John had pointed out, but also on account of the extremely pleasing arrangement.

R.I.B.A. Prizes and Studentships, 1925

Deed of Award

The designs and drawings submitted for the Prizes and Studentships in the gift of the Royal Institute are now on exhibition in the R.I.B.A. Galleries, 9 Conduit Street, and will remain open to members and the public until 2 February (10 a.m. till 8 p.m., Saturdays 5 p.m.). The Council's Deed of Award, read at the General Meeting of 19 January, gives the results as follows :—

THE ROYAL INSTITUTE SILVER MEDALS.

1. *The Essay Medal and Fifty Pounds.*

Five Essays were received under the mottoes :—

1. " Alpheus."
2. " Let us now praise famous men and our fathers that begat us."
3. " Speranza."
4. " Prudens."
5. " Londinium."

The Council have awarded the Silver Medal and Fifty Pounds to the author of the Essay entitled " The Æsthetics of the Ancients," submitted under the motto "Alpheus"* ; and a Certificate of Honourable Mention to the author of the Essay entitled " The Architect in History, his Training, Status and Work," submitted under the motto " Let us now praise famous men and our fathers that begat us." †

2. *The Measured Drawings Medal and Fifty Pounds.*

Five sets of drawings were sent in of the several buildings enumerated under mottoes as follows :—

1 " Bee " ; 4 strainers, 1 sheet and loose sketches. (The Pantheon, Paris.)
2. " La Justizia Sapienza " ; 10 sheets and book of sketches. (Fitzwilliam Museum, Cambridge.)
3. " Sapper " ; 5 sheets and book of sketches. (Temple of Bacchus, Baalbek.)
4. " Blue Diamond " (Device) ; 5 strainers, loose sketches and book of sketches. (Hampton Court Palace.)
5. " A.M.D.G." ; 7 strainers, loose sketches and book of sketches (Chiesa della Salute, Venice.)

The Council have awarded the Silver Medal and Fifty Pounds to the delineator of the drawings submitted under the motto "Bee"‡ ; and a Certificate of Honourable Mention to the delineator of the drawings submitted under the motto " A.M.D.G." §

* Frank Pentland Chambers, B.A. (Cantab.), Pâli, 18 Alleyn Park, West Dulwich, S.E.21.

† Martin S. Briggs, F.R.I.B.A., 9 Winterstoke Gardens, Mill Hill, N.W.7.

‡ Richard W. Briggs, B.A., A.R.I.B.A., 46 Alexandra Road South, Alexandra Park, Manchester.

§ Jack Antonio Coia, A.R.I.B.A., 88 Drumother Drive, Parkhead, Glasgow.

THE TRAVELLING STUDENTSHIPS.

1. *The Tite Prize and One Hundred Pounds.*

Twenty-six designs for a Small Museum were submitted under the following mottoes :—

	Strainers.
1. " Porphyry "	3
2. " Spade "	4
3. " Fuit Ilium "	4
4. " Pip "	4
5. " Pantile "	4
6. " Capri "	5
7. " Sand "	4
8. " Ogee "	4
9. " Gellio "	4
10. " Pecksniff "	4
11. " Plot "	4
12. " Key "	4
13. " Snowy "	4
14. " Penates "	4
15. " Vela Rossa "	5
16. " Chianti "	4
17. " Ave atque Vale "	4
18. " Ilium Fuit "	4
19. " Volicita "	4
20. " Fish "	4
21. " Blat "	4
22. " Tessera "	4
23. " Snark "	4
24. " Brink "	4
25. " Frog "	4
26. " Isis "	3

The Council have awarded the Certificate and, subject to the specified conditions, the sum of One Hundred Pounds to the author of the design submitted under the motto " Tessera* " ; and Certificates of Honourable Mention to the authors of the designs submitted under the mottoes " Key " † and " Chianti." ‡

2. *The Pugin Studentship and Seventy-Five Pounds.*

Four applications were received for the Pugin Studentship from the following gentlemen :—

1. Wm. Beadle .. .. 3 sheets
2. D. H. McMorran .. .. 3 strainers, 1 sheet
3. D. M. Mickelthwaite .. 3 strainers
4. E. H. H. Williams .. 4 strainers

The Council have awarded the Medal and, subject to the specified conditions, the sum of Seventy-Five Pounds to Mr. D. H. McMorran ; and a Certificate of Honourable Mention and Ten Pounds to Mr. E. H. H. Williams.

3. *The Owen Jones Studentship and One Hundred Pounds.*

Three applications were received for the Owen Jones Studentship from the following :—

1. E. Dinkel .. .. .. 6 strainers
2. J. Hollinshead .. .. 6 strainers
3. Miss L. Payne .. .. 6 strainers

* Mr. D. H. Beaty-Pownall, c/o The Architectural Association, 34 Bedford Square, London, W.C.

† Mr. John F. D. Scarborough, 49 Bernard Street, Russell Square, W.C.1.

‡ Miss Alison Sleigh, 16 Gordon Square, London, W.C.1.

The Council have awarded the Certificate and, subject to the specified conditions, the sum of One Hundred Pounds to Miss L. Payne.

4. *The Godwin Bursary and Wimperis Bequest : Silver Medal and One Hundred and Thirty Pounds.*

Two applications were received for the Godwin Bursary and Wimperis Bequest from the following gentlemen :—

1. Mr. L. H. Bucknell [*A*].
2. Mr. C. A. Farey [*A*.].

The Council have awarded the Medal and, subject to the specified conditions, the sum of One Hundred and Thirty Pounds to Mr. L. H. Bucknell [*A*].

5. *The R.I.B.A. (Alfred Bossom) Studentship : a Gold Medal and Two Hundred and Fifty Pounds.*

The Council have awarded Silver Medals to the authors of designs accompanied by reports for a Building for a Company formed to develop an Island Site, submitted under the following mottoes :—

*1. " Red Diamond " (Device)	3 sheets
†2. " Thol "	2 sheets
‡3. " Taxi "	3 strainers

The Council have awarded the Gold Medal, and, subject to the specified conditions, the sum of Two Hundred and Fifty Pounds to the author of the design and report submitted under the motto " Taxi."

THE GRISSELL GOLD MEDAL AND FIFTY POUNDS.

One design for a Dance Hall was submitted under the following motto :—

§ " Iona " : 6 strainers and book of calculations.

The Council have awarded the Medal and Fifty Pounds to the author of the design submitted under the motto " Iona."

THE ASHPITEL PRIZE, 1924.

The Council have, on the recommendation of the Board of Architectural Education, awarded the Ashpitel Prize (which is a Prize of Books, value £10, awarded to the candidate who has most highly distinguished himself among the candidates in the Final Examinations of the year) to Mr. Geoffrey Reynolds Barnsley, of 3 Paper Buildings, Temple, E.C.4, Probationer 1919, Student 1922, and who passed the Final Examination December 1924.

THE R.I.B.A. SILVER MEDAL FOR RECOGNISED SCHOOLS.

The Council have awarded the Silver Medal for the best set of drawings submitted at the Annual Exhibition by Post-graduate Students of the Recognised Schools exempted from the Final Examination to Miss Elsie Rogers, of the Manchester University School of Architecture.

* Mr. Frank Henry Heaven, A.R.I.B.A., 39 Coronation Street, Aberkenfig, Glam.

† Mr. Charles Thomas Bloodworth, 138 Derby Lane, Stoneycroft, Liverpool.

‡ Mr. Frank Edgar Bennett, A.R.I.B.A., 42A Markham Square, Chelsea, S.W.3.

§ Mr. Arthur Edwin Cameron, 18 Eastwood Road, South Woodford, E.18.

THE TRAVELLING STUDENTS' WORK.

Godwin Bursar, 1923.—The Council have approved the report of Mr. W. T. Benslyn [*A*.], who travelled in America.

Owen Jones Student, 1924.—The Council have approved the work of Mr. J. H. Sexton, who travelled in Italy.

EXAMINATION FOR THE R.I.B.A. DIPLOMA IN TOWN PLANNING.

On the recommendation of the Board of Architectural Education, the Council of the Royal Institute of British Architects have approved the following revised regulations for the examination :—

R.I.B.A. Diploma in Town Planning.

Regulations for the admission of candidates to the examination leading to the Diploma in Town Planning.

Candidates applying for admission to the Examination in Town Planning must be either : (*a*) Fellows of the R.I.B.A. ; (*b*) Associates of the R.I.B.A. ; or (*c*) Licentiates of the R.I.B.A.

The examination will be held annually in July, and candidates must make application to sit before 1 March in any year.

(1) *Applications.*—Candidates must submit in support of their applications :—

(i) An original study illustrated by sketches of an existing town or part of a town.

(ii) An original scheme for site planning, town planning or town development with a description.

(iii) A written thesis on a subject pertaining to town planning accompanied by a plan or plans.

(2) *Thesis.*—On the application being approved by the Board of Architectural Education, the candidate will be required to prepare a thesis and scheme to a special subject which will be set by the examiners. The subject will be the lay-out of an actual area, of which ordnance sheets will be supplied to the candidate, together with set conditions. The candidate must hand in this thesis and scheme at the beginning of the written examination.

Copies of the forms of application, which contain the regulations and syllabus for the examination, may be obtained free on application to the Secretary R.I.B.A.

13 January 1925.

THE R.I.B.A. (ARCHIBALD DAWNAY) SCHOLARSHIPS.

In accordance with the terms of the will of the late Sir Archibald Dawnay, the Royal Institute of British Architects offer annually, for competition between students of recognised schools, two scholarships, one of £75 per annum for one or two years, and one of £50 per annum for one or two years.

The scholarships are intended to foster

(1) The advanced study of all forms of construction, not necessarily steel work and reinforced concrete.

(2) The economic, skilful and practical use of materials.

(3) Work in which the main structural elements shall find their logical expression in the architectural design.

Candidates are advised that the completion of comparatively simple problems in all their structural aspects is to

be preferred to the superficial treatment of ambitious schemes. These problems are to be those normally set in the second and third years. The notebooks dealing with construction in those two years may also be submitted.

The competition is open to all students of recognised schools who are in the third year of their school course.

Successful competitors will be required to register as students of the R.I.B.A. before taking up the scholarship awarded.

In the first instance applications must be made through the principals of the various schools, who will nominate candidates and submit evidence of study as above on behalf of the student or students nominated. The applications should reach the Board *by the end of July in each year.*

The award will be made by a jury nominated by the Board of Architectural Education.

The scholarships will be tenable at anyrecognised school selected by the successful candidates, who will be required to devote their time particularly to the object of the scholarship, specified above.

Two-thirds of the amount of the scholarship awarded will be paid to the successful candidate when he starts his year's work at a recognised school, and the remaining one-third after he has submitted satisfactory evidence of his studies during the past year.

Applications for renewal of scholarships must be made by the students direct to the Board *not later than the end of July in each year*, and be accompanied by evidence of study during the past year.

In all cases the tenure of the scholarship for a second year will be subject to approval or revision by the Board.

The scholarships are open to all subjects of Britain or the British Dominions, but are tenable only in the British Isles.

Obituary

THE LATE MAJOR STEWART HENBEST CAPPER, M.A., F.S.A., [*A.*].

By Professor G. Baldwin Brown [*Hon. Associate*].

I am glad of the opportunity to add a word or two of a personal kind about my old and valued friend Henbest Capper, though the notice of his architectural work, alike as executant and as teacher, will be of chief importance to readers of the Journal. When one laments one's friend, so suddenly taken from the midst of his useful and important activities, it is not the work one thinks of first but the man. His life was productive in many spheres, and he was endowed with varied gifts, scholarly, administrative, educational and social, but he was always more than his work, and in whatever he essayed and carried out there was revealed his genial, flexible, unselfish nature. His was a sunny personality, always attractive, always helpful, and he was the best of companions and the most loyal of friends. Apart from intimate and delightful personal intercourse, the connection with him of the writer was largely academic. Head-boy or " Dux " of the Royal High School, Edinburgh, he pursued in that city his University studies mainly in the Classical Department, in which he took first class Honours. His enthusiasm for the work of the Greeks was of course kindled greatly by their monuments, as well as by their literature, and days spent with him in Athens during an International Congress of Archæology will long be remembered by the writer, when, amongst other archæological essays, they tried to identify remains of the original Cimonian masonry in the southern wall of the Acropolis.

While in the practice of his profession in Edinburgh, Major Capper took part in the work of the University, acting as examiner in the History and Theory of the Arts, a subject which appealed to his scholarly instincts, and for dealing with which he was specially well fitted through his wide knowledge of continental languages, and consequent familiarity with the best books on the subject in foreign tongues. Quite at ease in French and German, he added to these languages Spanish, which he came to know through his membership of the household of the late Sir Robert Morier at the British Embassy in Madrid, where he fulfilled both secretarial and tutorial duties. He made and kept many Spanish friends, and of course revelled in the fascinating architecture of the Peninsula. His acquisition of Arabic during the period of his war service in Egypt was, for a man of middle life, something of a feat, and was the necessary condition for his efficiency in his important work as Military Censor during the war, and his subsequent activities in the same branch under the Egyptian Ministry of the Interior. Those who knew him best in his home surroundings will be most ready to believe what we are told of his success in his Egyptian work, and his friends here will have no difficulty in accepting what a warmhearted comrade has written of him, " he was always considered the most popular man in Egypt, and will be terribly missed there."

By Alexander N. Paterson [*F.*].

The career of Henbest Capper was so diversified and so widely distributed geographically that a full appreciation of his brilliant and attractive personality would require the collaboration of many minds in many places to do it justice. But, although particulars regarding much of his work are unknown to me, of the man I can speak from long experience, our association having commenced in his later student days and having continued in closest friendship until his recent passing.

Although born of English parents within Greater London, Capper's earlier years from the age of nine were spent in Edinburgh. There his intellectual powers were already shown in the High School and later at the University, where in 1880 he graduated with first class honours in Classics. Before this he had studied for a session at Heidelberg.

Architecture he already aimed at as his life work, but about this time, the post being offered to him of tutor to the only son of Sir Robert Morier, then British Minister to Portugal, he accepted it with its advantages as a temporary situation. So much were his services appreciated, however, that he was induced to remain on as tutor and also as private secretary for several years, first at the Legation at Lisbon and latterly at the Embassy in Madrid, so that it was not until 1884, when already twenty-four years of age, that he commenced his active training at the Ecole des Beaux-Arts. Though late in life for such a step, he entered on his studies with the advantages conferred by a wide culture, together with a knowledge and appreciation of all that is best in Art.

Thus, though never a brilliant draughtsman, he quickly showed his ability in handling the various *projets* and the work generally of the school. His knowledge of languages, only to bear full fruit at a later stage in life, was also a useful asset in many ways. Already at this time, in addition to Latin and Greek, he was familiar with French, German, Italian, Portuguese and Spanish. On his entry at the Atelier Pascal, where I had preceded him by about a year, we were at once brought into close communion, made closer a little later by our taking rooms in common and by various jaunts together *en province* for sketching or refreshment after strenuous days and nights at the atelier and *en loge*. When not so engaged, many were the evenings spent with music, Capper at the piano—for he was a delightful executant and had an endless repertoire among the classics, with a special fondness for the Beethoven Sonatas.

From Paris, in 1887, he returned to Edinburgh, where, after a period gaining practical knowledge in the office of Mr. G. Washington Browne (now P.R.S.A.), he commenced practice, for a time with F. W. Simon, afterwards on his own account in St. Andrew Square. During the comparatively few years he was so occupied good work was produced in Edinburgh, Glasgow and elsewhere, mainly domestic, including, however, at Whiteinch, a suburb of the latter city, an interesting girls' orphanage. But, with the prospect of an extensive business in view, the scene of his labours was again changed in 1896.

Partly for health reasons, partly from his interest in education and young men and boys of all ranks and classes (a special characteristic throughout his life), he took up the appointment of Professor of Architecture at McGill University, Montreal, then offered to him. For seven years there, followed by nine in the similar position at the Victoria University, Manchester, the middle years of his life were spent with success. At both places I was privileged to visit him and to see something of his work, but fitting testimony of his worth as a teacher must be looked for from among those who were his students. But for another breakdown in health with the, to him, trying climate of Manchester, and the march of events leading up to the Great War, he might still have been with us as Professor Capper, the designation by which he was so long known.

In what proved to be the last chapter of his career may be seen yet another phase of his many-sided character: his intense patriotism and his love of soldiering. Already in Montreal, partly influenced by the Boer War then in progress, he had joined the Canadian Field Artillery, in which he attained the rank of captain. On returning to this country he obtained a transfer to the Manchester Volunteers, organised the O.T.C. of the University there, later linked with that of Leeds, and he was awarded the brevet rank of major. Although on medical advice he had resigned his professorship in 1912, when the war came he now, at 54, joined his battalion and with it (among the first of the Territorial Regiments to go on service) went to Egypt. Declared unfit, to his intense disappointment, for the strenuous campaign in Gallipoli, he was detained there as military censor of telegrams, a post which he continued to occupy throughout the war. For this his natural ability, together with his knowledge of languages (to these he now added Arabic to fit himself the better for his new duties) made him an ideal occupant, and on demobilisation he was given a position entailing similar responsible and confidential work in the European Department of the Ministry of the Interior at Cairo, in which he was occupied until the end.

His death is a great loss to his own country and to that of his temporary adoption: in that it is more personal it is all the greater to the many friends whom his generous, unselfish and altogether lovable character had made for him in each of the various centres in which he laboured. Of these friends I count myself happy to have been reckoned as one.

THE LATE FRANCIS G. NEWTON, *Licentiate*.

Mr. Newton died suddenly at Assiut, on the 29th December, from sleepy sickness.

Mr. Newton had been engaged on archæological work for several years. He assisted Dr. Duncan Mackenzie in his excavations in Sardinia and for the Palestine Exploration Fund in Southern Palestine. In recent years he also assisted Sir Arthur Evans at Knossos, in Crete, and for two seasons was architect on the staff of the joint expedition of the British Museum and the University Museum, Philadelphia, at Ur, in Southern Babylonia. After helping in the work of the Egypt Exploration Fund at El-Amarna, he was appointed last year director of the society's excavations in Egypt, and left two months ago for Egypt to carry on work. The premature death of Mr. Newton will prove a great loss to British archæology, for which he has done much successful work, especially in architecture.

Mr. William Walcot, [*F.*], the distinguished artist, writes: "Newton and I had arranged to meet in Rome next March and spend some time in Paris on our way to London, where we had decided that we should take an office and that I should collaborate with him in the rendering of drawings of his future discoveries. His premature death has put an end to our plans, leaving much good work undone. I have lost a loyal friend and delightful companion."

ARCHITECTS' BENEVOLENT SOCIETY.

Scheme of Insurance.

In view of the interest shown by architects in the Scheme of Insurance, the Council of the Architects' Benevolent Society have recently secured the help of an advisory committee of insurance specialists.

The Architects' Benevolent Society is now in a position to answer enquiries on every class of insurance business, whether concerning existing or contemplated policies, and is ready to give considered advice on all such questions.

NOTES FROM THE MINUTES OF THE COUNCIL MEETING,

5th January 1925.

Architectural Education.

On the recommendation of the Board of Architectural Education

(*a*) The Report of the Prizes Conference was approved, and the Board was authorized to take the necessary steps for carrying into effect the scheme for co-ordinating the Prizes and Studentships.

(*b*) A revised scheme for the R.I.B.A. (Archibald Dawnay) Scholarships was approved.

(*c*) The report of the R.I.B.A. Visiting Board on the School of Architecture of the Architectural Association was approved.

(*d*) The Ashpitel Prize for 1924 was awarded to Mr. G. R. Barnsley.

(*e*) The mark of distinction for a Thesis was awarded to Mr. H. R. Steele.

(*f*) Revised regulations for the conduct of the examination for the Diploma in Town Planning were approved.

Sir William Emerson, Past-President, and Mr. Paul Waterhouse, Past-President.

The Council directed that an expression of deep sympathy at the loss of these two Past-Presidents be conveyed to the relatives of the deceased.

Honours.

Messages of congratulations were sent to Sir Aston Webb (Past-President) and Sir Frank Dicksee (Hon Associate) upon the honours which His Majesty the King had recently been pleased to confer upon them.

The Incorporation of Architects in Scotland.

Approval was given to an alteration in Bye-law 37 of the Incorporation of Architects in Scotland.

London University Architectural Education Committee.

Mr. Arthur Keen was appointed to represent the R.I.B.A. on the London University Architectural Education Committee in place of the late Mr. Paul Waterhouse.

St. Paul's Bridge Conference.

Mr. L. H. Bucknell was appointed to represent the R.I.B.A. on the St. Paul's Bridge Conference in place of the late Mr. Paul Waterhouse.

The Royal Sanitary Institute and Sanitary Inspectors' Examination Joint Board.

Mr. H. D. Searles-Wood was nominated for appointment by the Minister of Health as a member of the Board.

Notices

The Seventh General Meeting (Ordinary) of the Session 1924-25 will be held on Monday, 2 February 1925, at 8.30 p.m., for the following purposes :—

To read the Minutes of the General Meeting (Ordinary) held on 19 January, 1925 ; formally to admit members attending for the first time since their election ; to announce the names of candidates nominated by the Council for election to the various classes of membership.

To announce the Council's nomination for the Royal Gold Medal, 1925.

The President to deliver his Address to Students and to present the Prizes and Studentships awarded by the Council for 1925.

Mr. Maurice E. Webb, D.S.O., M.C., [*F.*], to read a criticism on the designs and drawings submitted for the Prizes and Studentships.

STUDENTS, R.I.B.A.

The following candidates, having passed satisfactorily the architectural courses at the Recognised Schools indicated against their names, have been registered as "Students R.I.B.A."

Ali : Syed Aziz (Architectural Association), c/o The Architectural Association, 35 Bedford Square, W.C.1.

Ashburner : Edward Heathcott (Liverpool University), 5 Fairfield Road, Stockton Heath, Warrington.

Astbury : Frank Nicholas (Liverpool University), 13 Wolverhampton Road, Stafford.

Barnes : Thomas Scott (Architectural Association), Morden Lodge, Morden, Surrey.

Bhuta : Gopalji Mulji (Sir J. J. School of Art, Bombay), c/o Messrs. Gregson, Batley and King, King's Building, Fort, Bombay, India.

Butling : George Albert (Liverpool University), 79 Blantyre Road, Liverpool.

Crossley : Frederick Hamer (Liverpool University), 15 Arnside Road, Wallasey, Cheshire.

Dower : John Gordon (Cambridge University School of Architecture), "Willowdene," Ilkley, Yorkshire.

Enthoven : Roderick Eustace (Architectural Association), 3 Cleveland Gardens, W.2.

Fairhurst : Philip Garland (Victoria University, Manchester), Garth, Wilmslow, Cheshire.

Forster : Edward (London University), 1 Leaside Avenue, Muswell Hill, N.10.

Gatley : Geoffrey Higson (Victoria University, Manchester), Rockshire, Disley, Cheshire.

Grant : Garrow Gregor (Architectural Association), "The Wren's Nest," Speldhurst, Kent.

Greig : Jessie Marjorie (London University), "Highlands," Lampton, near Hounslow, Middlesex.

Griggs : Henry Thomas Brock (London University), "The Cabin," Alric Avenue, Malden, Surrey.

Harley : Thomas (Edinburgh College of Art), 85 Charlotte Street, W.1.

Hobday : Ralph (London University), 34 Chepstow Place, Bayswater, W.

Hope : Arthur Fentern (London University), "Canterton," Hatch End, Middlesex.

Jenkins : William Victor (Liverpool University), 20 Manville Road, Wallasey, Cheshire.

Jones : Anne Farewell, M.A.Oxon (Architectural Association), "Brenley," Mitcham Common, Surrey.

Lancashire : John Edwin (Sheffield University), "West Lawn," Fulwood Park, Sheffield.

Miller : Joseph Charles (Glasgow School of Architecture), 101 Stanmore Road, Mount Florida, Glasgow.

Miller : Joseph Haydn (Liverpool University), 604 Ormskirk Road, Pemberton, Wigan.

Minoprio : Charles Anthony (Liverpool University), 28 Alexandra Drive, Liverpool.

Moberly : Sylvia Grace (Architectural Association), 18 Gordon Square, W.C.1.

Monroe : Leonard (Cardiff Techniacl College), 27 Victoria Road, Penarth, South Wales.

Motafram : Jamshedji Dossabhoy (Sir J. J. School of Art, Bombay), 265 Lohar Street, Dhobi Talao, Bombay, India.

PAKINGTON : HON. HUMPHREY ARTHUR (Architectural Association), 9 Arundel Gardens, W.11.
PATERSON : ERIC ARNOLD (Sheffield University), 65 Clarendon Road, Fulwood, Sheffield.
PRIESTLEY : CLARENCE JOSEPH (Liverpool University), 15 Sandringham Road, Golders Green, N.W.11.
ROGERS : ELSIE (Victoria University, Manchester), 23 Albert Road, Whalley Range, Manchester.
SHARMA : PURSHOTTAM LAL (Sir J. J. School of Art, Bombay), c/o School of Architecture, Sir J. J. School of Art, Bombay, India.
SISSON : MARSHALL ARNOTT (London University), Hucclecote Court, near Gloucester.
SPENCELY : HUGH GREVILLE CASTLE (Liverpool University), Ashley House, Box, Wilts.
STEWART : ALEXANDER MALCOLM (Aberdeen, Robert Gordon's College), c/o Mrs. Noel, 38 Fairfield Road, Inverness.
THOMAS : BRYAN WILLIAM RYLANDS (Cardiff Technical College), " Briar Dene," North Road, Cardiff.
TIMMINS : SAMUEL DENNIS WALLEY (Architectural Association), c/o The Architectural Association, 34–36 Bedford Square, W.C.1.
WALL : MAUD AMY MARGARET (Liverpool University), 12 Devonshire Road, Liverpool.
WALLIS : KATHARINE MABEL (London University), 165 Pittshanger Lane, Ealing, W.5.
WATT : LESLIE ALEXANDER (McGill University, Montreal), 24 Maple Avenue, Ste Anne de Bellevue, Province Quebec, Canada.
WHITELEY : FRANK (Victoria University, Manchester), 67 South Drive, Chorlton-cum-Hardy, Manchester.
WILLS : THOMAS THEOPHILUS (Liverpool University), The Fold, Spring Vale, Wallasey, Cheshire.
WILSON : PERCY ROY (McGill University, Montreal), "Cedarhurst," Saulte Ste Marie, Ontario, Canada.
WRAY : KENNETH FLETCHER (Architectural Association), Strathmore, Conisborough, near Rotherham, Yorks.

Competitions

ROYAL SOCIETY OF ARTS.

MEMORIAL LIBRARY FOR A COLLEGE COMPETITION.

In order to encourage the study of designs for industrial purposes the second series of open competitions organised by the Royal Society of Arts will include a competition for a Memorial Library for a College suitable for housing a small but rare collection of books.

The conditions are as follows :

A Travelling Scholarship of the value of £150 for one year will be offered on the following conditions :

Candidates must not be over 35 years of age. They must be prepared to travel in France, Italy, Spain or Flanders for six months, which, however, may be broken up into periods of, say, three or two consecutive months.

SUBJECT OF COMPETITION.

The subject is a Memorial Library for a College, suitable for housing a small but rare collection of books.

The superficial area of the room is not to exceed 1,500 feet. The method of arranging the bookcases and displaying a few *objets d'art* is left to the competitor. Cost is not a primary consideration, and the use of expensive woods, as well as inlays of ivory, ebony or metal, in addition to marble, can be considered.

In a suitable place a commemorative panel or some other *motif* should remind the visitor of the origin of the Library. The scheme of the ceiling, which can be treated as a space for decorative painting, as well as the pattern of the floor, must harmonise with the whole design.

A preliminary competition of twelve hours will be held in London and other centres in April 1925. Candidates must give notice of their intention to compete to the Secretary of the Royal Society of Arts, not later than 14 March. For this competition the following drawings will be necessary :

A plan of the floor, one section, and a plan of the ceiling, all to the scale of a quarter of an inch to a foot.

For the final competition two months will be allowed to the competitors, selected after the first competition. The finished drawings are to include the following :

Plans of floor and ceiling and two sections to a scale of half an inch to a foot, a detail drawing of the fireplace or some other feature, showing the complete height and treatment of the room from floor to ceiling.

Competitors should bear in mind that electric lighting and central heating are to be considered.

The competition will take place in June 1925.

LEAGUE OF NATIONS.

COMPETITION FOR THE SELECTION OF A PLAN WITH A VIEW TO THE CONSTRUCTION OF A CONFERENCE HALL FOR THE LEAGUE OF NATIONS AT GENEVA.

The League of Nations will shortly hold a competition for the selection of a plan with a view to the construction of a Conference Hall at Geneva. The competition will be open to architects who are nationals of States Members of the League of Nations.

An International Jury consisting of well-known architects will examine the plans submitted and decide their order of merit.

A sum of 100,000 Swiss francs will be placed at the disposal of the Jury to be divided among the architects submitting the best plans.

A programme of the competition will be ready in February, 1925, and will be despatched from Geneva so that Governments and competitors may receive copies at approximately the same date. Copies for distant countries will therefore be despatched first.

The British Government will receive a certain number of free copies. These will be deposited at the Royal Institute of British Architects, and application should be made to the Secretary, R.I.B.A., 9, Conduit Street, W.1, by intending competitors.

Single copies can be procured direct from The Secretary-General of the League of Nations at Geneva, for the sum of 20 Swiss francs, payable in advance, but will not be forwarded until after the Government copies have been despatched.

On the nomination of the President of the Royal Institute, Sir John Burnet, A.R.A., has been appointed as the British representative on the Jury of assessors.

UGANDA RAILWAY NEW OFFICE, NAIROBI.

Apply to the Crown Agents for the Colonies, 4 Millbank, Westminster, S.W.1. Closing date for receiving designs, 28 February 1925. Assessor : Mr. William Dunn, F.R.I.B.A. Deposit £1 1s. Telegram received :—

" Reference New Railway Offices. Many requests received from competitors for extension of competition. Agree to one month extension. Please advertise this. Lists of questions and answers being sent by first mail for distribution."

THE NEW INSTITUTE FOR THE BLIND, BUENOS AIRES, ARGENTINE REPUBLIC.

An International Competition has been promoted for the Argentine Institution for the Blind, Buenos Aires, Argentine Republic.

A small number of copies of the Conditions have been

deposited in the R.I.B.A. Library for the information of British Architects who may desire to compete.

MOLD HOUSING SCHEME.

Members and Licentiates of the Royal Institute of British Architects must not take part in the above competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

MASONIC MEMORIAL COMPETITION.

Apply to The Grand Secretary, Freemasons' Hall, Great Queen Street, W.C.2. Last day for applying for conditions, 23 August 1924. Deposit, £1 1s. Closing date for receiving designs, 1 May 1925. Assessors: Sir Edwin Lutyens, R.A. [*F.*] (appointed by the President); Mr. Walter Cave [*F.*], Mr. A. Burnett Brown, F.S.I.

MANCHESTER ART GALLERY.

Apply to the Town Clerk, Town Hall, Manchester. Closing date for receiving designs, 28 February 1925. Assessors: Professor C. H. Reilly, O.B.E. [*F.*], Mr. Percy S. Worthington, Litt.D., F.S.A. [*F.*].

BRANCH PUBLIC LIBRARY, HAREHILLS, LEEDS.

Assessor, Mr. Percy S. Worthington, M.A., Litt.D., F.R.I.B.A. Last day, 16 February 1925. Apply to:—Thos. Thornton, Town Hall, Leeds.

BETHUNE MEMORIAL TO THE MISSING.

The Imperial War Graves Commission desire Members and Licentiates of the Royal Institute to be reminded that applications to take part in the above Competition from persons other than those who had signified their intention of competing on or before 1 January 1924 cannot be considered. Due notice of this regulation was published in the Professional Press on various occasions during August and September, 1923.

RUGBY U.D. COUNCIL HOUSING SCHEME.

Members and Licentiates of the Royal Institute of British Architects must not take part in the above competition, because the conditions are not in accordance with the published regulations of the Royal Institute for architectural competitions.

Members' Column

DISSOLUTION OF PARTNERSHIP.

We beg to give notice to our friends and clients that from 31 December 1924 we, the undersigned, have mutually agreed to dissolve the firm of Osborn, Pemberton and White. Mr. Guy Pemberton will practise separately at 20a Henley Street, Stratford-on-Avon, and at No. 120 Edmund Street, Birmingham, and Mr. John White will continue to practise at No. 40 Bennetts' Hill, Birmingham, and at Stratford-on-Avon, under the style of Osborn and White. (Signed) Guy Pemberton and John White.

APPOINTMENTS VACANT.

Vacancies exist for Architectural Assistants in the Public Works Department, Government of Hong Kong. Three years' agreement. Salary, £460 to £500, with further annual increments to a maximum of £1,000, subject to efficiency. Candidates should be Associates R.I.B.A., unmarried, age 24-32, experienced in design, working drawings, details, specifications and some knowledge of quantities. Experience in steel-framed buildings and reinforced concrete desirable. Further particulars and application forms can be obtained on application to the Crown Agent's Office, 4 Millbank, London, S.W.

APPOINTMENTS WANTED.

Architectural engineer of very large experience desires work, temporary or permanent, anywhere. Special qualifications in geology, mining, drainage, underpinning and shoring, ventilation and heating, foundations and dilapidations, building and land surveying, also levelling. Highest references. Willing to take charge of job.—Apply Box 8322, c/o Secretary R.I.B.A., 9 Conduit Street, W.

OFFICE BOY RECOMMENDED.

A member recommends a youth as office boy. Good references.—Apply to the Secretary R.I.B.A., 9 Conduit Street, London, W.1.

COMMENCEMENT OF PRACTICE.

Mr. H. M. R. Burgess [*A.*] has commenced practising at 77 Taff Street, Pontypridd.

BOOKS FOR SALE.

Architectural books (second-hand), about 150 vols., for sale. List sent.—Ashworth, Dome Buildings, Richmond, Surrey.

Minutes VI

Session 1924–1925.

At the Sixth General Meeting (Ordinary) of the Session 1924–1925, held on Monday, 19 January 1925, at 8 p.m., Mr. J. Alfred Gotch, F.S.A., President, and afterwards, Mr. E. Guy Dawber, F.S.A., Vice-President, in the chair:

The attendance book was signed by 25 Fellows (including 7 Members of the Council), 37 Associates (including 3 Members of the Council), 2 Hon. Associates, 5 Licentiates, and a number of visitors.

The Minutes of the Meeting held on 5 January 1925, having been taken as read, were confirmed and signed by the Chairman.

The Hon. Secretary announced the decease of Major Stewart Henbest Capper, M.A.Edin., F.S.A., R.C.A., elected Associate 1891; Thomas Morgan Bevan, elected Licentiate 1910; Francis Giesler Newton, elected Licentiate 1911, and it was Resolved that the regrets of the Royal Institute for the loss of these members be recorded in the Minutes and a message of sympathy and condolence be conveyed to their relatives.

The following member, attending for the first time since his election, was formally admitted by the Chairman: Mr. L. A. Culliford [*F.*].

Dr. Oscar Faber, O.B.E., D.Sc., having read a Paper on "Applications in Building and Foundations of Modern Engineering Construction," and illustrated it by lantern slides, a discussion ensued, and on the motion of Mr. H. D. Searles-Wood [*F.*], seconded by Mr. E. Fiander Etchells (Hon. Associate), a vote of thanks was passed to Dr. Faber by acclamation, and was briefly responded to.

The Secretary having read the Deed of Award of Prizes and Studentships made by the Council under the Common Seal, the sealed envelopes bearing the mottoes of the successful competitors were opened and the names disclosed.

The Meeting closed at 10.55 p.m.

R.I.B.A. JOURNAL.

It is desired to point out that the opinions of writers of articles and letters which appear in the R.I.B.A. Journal must be taken as the individual opinions of their authors and not as representative expression of the Institute.

Dates of Publication.—1924: 8th, 22nd November; 6th, 20th December. 1925: 10th, 24th January; 7th, 21st February; 7th, 21st March; 4th, 25th April; 9th, 23rd May; 13th, 27th June; 18th July; 15th August; 19th September; 17th October.

CORRECTION.

In the obituary of Mr. A. W. Sheppard in the last issue of the Journal it should have been stated that he had been recently elected a Fellow, and was no longer an Associate R.I.B.A.

VOL. XXXII. No. 7 7 FEBRUARY 1925

Address to Students

BY THE PRESIDENT, MR. J. ALFRED GOTCH, HON. M.A. (OXON), F.S.A.

[*Delivered at the General Meeting of the Royal Institute of British Architects, Monday, 2 February* 1925.]

IN the far-off days when I was an active member of the Architectural Association, I remember thinking and (I believe) saying that it was rather hard on young architects, and more particularly on those who were pupils or assistants, that they should have to work all day and then be obliged to devote their evenings to a different kind of work at the Association, while their friends in other callings were able to amuse themselves as they pleased. When I say they were "obliged" to do this, I do not mean that there was any compulsion about it, but that, outside the Royal Academy school, it was only in the classes and lectures of the Architectural Association, which were all held in the evening, that there was any opportunity of becoming acquainted with those sides of architecture which lie beyond the routine of office work.

But all this is now changed. The A.A. is no longer an institution carried on by voluntary effort, a place where young men met of an evening to teach themselves under the guidance of their fellows of somewhat greater age and wider experience. It is now a well-established, well-staffed, and well-equipped architectural school, affording a course of training spread over several years. Nor is it the only institution of its kind, as was the case in the old days. Forty years ago, it was, save for the Academy school, the only educational body of any account in the whole country, so far as architecture was concerned; and any lad seeking to be an architect had, almost perforce, to come to London for a time, if he aimed at anything higher than the prospect of carrying on a provincial practice within the old limitations—limitations which included good, sound work, but gave little opportunity for the pursuit of fine architecture.

From this point of view, again, there is a great change. Architectural schools, under the eventual control of the Institute, have been established in many of our large towns—Liverpool, Manchester, Leeds, Glasgow, Cardiff, and others. Some of the modern Universities, and Cambridge of the old, have started schools of architecture. The opportunities, therefore, of acquiring a sound training in the

innumerable subjects with which an architect has now to be familiar, are within the reach of nearly everyone. The path of the student is plain and open, cleared of obstacles. At every awkward corner is a guide, at every difficult climb a handrail. I have not myself had the chance of taking advantage of such assistance, but I cannot help thinking that, when the way is made so easy, half the fun of following it must be gone.

Essential as this imparted training is now considered, it must not be forgotten that the prominent architects of our own time, and still more those of the time just past, had little or none of it. They were, to a great extent, self-taught. Whether their work would have been better had they been taught by others, is a barren speculation. The old A.A. has given our profession some of its best known members. If you look back to its old records for the names of its most active members, its Presidents, you will find that hardly one of them has sunk into insignificance, and still less into oblivion—at any rate for the present, whatever of forgetfulness the future may hold.

I think we shall have to beware lest unstinted help lead to a lessening of strenuousness. I am told—and the phenomenon was illustrated in the A.A. play recently presented within these walls—that, although the drawing-boards are crowded during the first three years of the student's course, they are sparsely occupied during the fourth year and are almost empty during the fifth. Does this, by any chance, mean that when help and guidance are abundant, full advantage is taken of them, but that when the student is thrown more completely on his own resources, he shrinks from the ordeal? If so, ambition should be made of sterner stuff. Great work can only be achieved by hard work, for through that medium alone can talent show itself. Few are the young geniuses, facile in acquiring and expressing ideas, who make their corresponding mark in after life. Brains can achieve but little without work. It is the plodders, the hard workers, who carry on the world. If any man of middle age will look back upon the circle of his youthful friends, how many of the brilliant leaders of those distant days does he find in the forefront now?

Far be it from me to offer advice to my juniors. I hope I am modern enough to avoid making that mistake; for at no period of recorded time, not even when Solomon was fresh on the throne, were the young more willing to guide the world, to direct the failing footsteps of their fathers, or to point their grandsires to regions of kindly rest and oblivion.

But if I modestly shrink from giving advice, I may perhaps venture to bring to your remembrance a few things, old and new, from which you can draw your own conclusions. Among the old things worth recalling are the views on the great topic of Work which have been held from time immemorial, and have found expression in the literature of all ages. In our own tongue are records reaching back to the dawn of history, and throughout those records will be found allusions to labour which take for granted that hard work is the natural lot of man. The burden of these utterances is that, outside of Paradise, man must gain his living by the sweat of his brow; that he is born to labour as the sparks fly upwards; that if any will not work, neither shall he eat—a wholesome doctrine, now often heard with impatience.

The same ideas pervaded the Middle Ages and were embodied in the well-known aphorism, *Laborare est orare*. Nor did they die out at the Renaissance, that age of joyous delight in life, and of revolt against the crabbed philosophy of past centuries. The suave Raphael, the mighty Michael Angelo, the turbulent Cellini, all lived in an intermittent fury of hard work. Our own Shakespeare recognised its inestimable worth when he said "The labour we delight in physics pain," and—coming at a stride down to recent times—Stevenson concludes his essay on *El Dorado* with the words "To travel hopefully is better than to arrive, and the true success is to labour."

Thus far the past: but in modern days a different view seems to prevail in certain quarters. There seems to be a widespread inclination to curtail work and working hours, to limit output, to take full advantage of unearned doles, which theoretically are provided for the zealous, hard-working man, temporarily deprived of work but eager to resume it: all of which would appear to indicate the existence of a certain aversion to doing work if it can be avoided.

Even in the pursuit of pleasure—that inalienable right, accruing to us through the accident of having been born—we seem loth to indulge in undue exertion. We sit at ease to witness spectacles of exertion by other people; we are content to watch

great football matches instead of playing in little ones. Our very dancing entails a minimum of exertion ; well might the orchestras of to-day exclaim with them of old, " We have piped unto you, and ye have not danced "—" ye have but walked." Sir Christopher Hatton danced his way into Queen Elizabeth's favour ; he did not stroll thither.

In following our own vocation—of which, more than any other, it may be said that its ideals can only be expressed through work, and its particular advantages can only be obtained through work—in our own vocation we are inclined to content ourselves with pressing the button of photography instead of wielding the pencil of the sketcher. The button has its excellent uses, it is true, but for the student the pencil is the nobler instrument, more intimate in its teaching, more useful in its exercise.

It would seem, indeed, that when we come to some Hill Difficulty, which Bunyan's pilgrim mounted with so much toil, we are apt to feel aggrieved if it is not provided with a funicular. But the real truth is that hard work is one of the greatest blessings that can be bestowed. It is an anodyne to grief, a tonic to the mind, a sedative to the soul. What is so irksome as idleness ? What is more tedious than want of occupation ? The exercise of one's faculties is itself a pleasure, even if the result has no far-reaching effect.

The very deficiency of strenuousness in the mass gives greater scope to the individual : the hard worker has fewer competitors. Without undue perturbation he can work out his problem of construction, his problems of design ; from one inadequate effort to another he can climb to his final solution. He can wring its secrets from the past, through long summer days amid the soaring pillars of some ancient church, or beneath the mazy ceilings of Elizabeth, or from the graver adornment of the Georges. No trouble will be too great, no day too long, no means of sustenance too negligible. He will learn to know his own country and its splendid inheritance of architecture. He will learn to love its fields, its woods, its streams, its hills—aye, and its mountains, too, in the pursuit of his work. In its parks and its ancient gardens he will catch a glimpse of bygone grandeur ; within the walls which they surround he will find storehouses of the finest products of arts other than his own. Thus will he widen his outlook on life, on history and on art, and if he follow his bent to the full he will be eligible for inclusion in that small and select company who can with truth aver that they have slept in every county in England, and not only slept, I hope, but been wide awake as well.

Youth will have its day, and will still long, now as of yore,

> To sport with Amaryllis in the shade
> Or with the tangles of Neæra's hair,

even if Amaryllis herself sits at a drawing board, and the tangles of Neæra's hair hide her bowed head as she taps the typewriter. But let us not forget, after all, that now, as of yore, Fame (that last infirmity of noble mind) will still insist as a condition of our winning her, that we must

> Scorn delights, and live laborious days.

Well, my tirade is done ; and this, at any rate, can be said, that if symptoms of a decline in strenuousness may sometimes suggest themselves, even in architectural students, there is not much to carp at in the amount of work submitted for the prizes that bring us here to-night. More particularly is this true of the Tite prize, which has evoked the finest competition of recent years. Neither duty nor inclination prompt me to attempt criticism of the work of the year ; that responsibility is placed in the able hands of Mr. Maurice Webb.

But there is one matter upon which, in conclusion, I must touch, and which I am sure will be of interest. The very handsome prizes which, chiefly through the beneficence of individuals, the Institute is enabled to offer to students, are now to be co-ordinated in an intelligible manner, and they are to be arranged in a kind of ladder, of which the topmost rung will be the Rome Scholarship in Architecture. More than this : it is felt that Maintenance Scholarships are sorely needed in order that youths of narrow means, who have a call towards architecture, may be helped in their start on the arduous path. A considerable amount of money is now practically dissipated in small prizes throughout the country, prizes which do not always attract competitors. It is proposed to approach the donors to see if it may be possible to pool the funds with a view to founding Maintenance Scholarships with them. But whether this prove practicable or not, a first step has been taken in the desired direction, for the Society of Architects have allocated part of their funds to one Maintenance Scholarship and the Institute part of theirs to another. On this agreeable outlook I will conclude.

Review of the Work Submitted for the Prizes and Studentships, 1925

BY MAURICE E. WEBB, D.S.O. [*F.*].

[*Read before the Royal Institute of British Architects on Monday, 2 February* 1925.]

MR. PRESIDENT, LADIES AND GENTLEMEN,—I have the honour to speak to-night as a critic, an official critic appointed by you, Sir, with the express function of criticising the judgment of our own juries and in many cases the work of our own members. It is an anomalous position which, unless the utmost goodwill is exercised on both sides, may some day land a President and the juries in an untenable position! But this year, owing to the splendid competition for our prizes, I am the person who has been landed in the untenable position; like the King in *Princess Ida*,

> "I find my life extremely flat
> With nothing whatever to grumble at."

What, therefore, am I to do? It has been well said of a critic, "If you dissemble sometimes your knowledge of that you are thought to know, you shall be thought another time to know that you know not." I propose, therefore, to give first some solid facts about which I *do* know and then some thoughts upon the designs and drawings hanging upon these walls, in the hope that they may, as honest criticism, be of use to the schools and their students. These drawings are the work of students who have either been trained in Schools of Architecture or in architects' offices as pupils. If you can judge the value of training by success in prize competitions, the results this year are conclusive.

The Architectural Association is conspicuously successful in being represented by the winners of the Tite, the Grissell, the Alfred Bossom and the Godwin Bursary—a great record. The Essay has gone to Cambridge and the Owen Jones to London University. May I express a hope that architects will investigate very carefully the merits of the nearest School of Architecture before taking a boy or a girl into their offices as a whole-time pupil?

The President has referred briefly to the general revision which is in prospect of our Institute prizes and scholarships. He has left it to me to fill in some details of what is, I believe, the beginning of a big constructive effort to enable young men who show any real talent for architecture to pursue their ambition in the best atmosphere and under the most favourable conditions.

The proposals now under consideration, and I am glad to say approved by the R.I.B.A. Council and by the Recognised Schools, take two forms.

The first, and perhaps the most important, is the introduction, if the necessary funds can be found, of a series of Maintenance Scholarships of the maximum value of £100 a year. These scholarships are to be awarded to men who show a talent for architecture but are without the means to fit themselves for its practice by the training which the modern architect requires.

The Board of Architectural Education hope to found ten of these scholarships in different parts of the country, and have asked the schools to co-operate by remitting or reducing their fees to such scholars. New South Wales has founded two, tenable in England, and we hope that the other Dominions will be inspired by this excellent example to follow suit. These will be additional to the ten English scholarships.

The next constructive point we are working on is our prizes. A comprehensive proposal has now been put forward by a conference, representative of all the bodies interested, for dealing with the whole question of prizes, many of which were founded before the present system of education had developed. It is intended in future to bring all the prizes for design into line with the Prix de Rome and to arrange them to lead up to this prize.

Largely through the help of the Council of the Society of Architects, it will in future be possible for the Institute to award a great prize for design every year. Since the war, owing to the depreciation of money values, the Soane has been awarded biennially (this being the alternate year when it is not awarded).

In future, if the decision of the Council of the Society is ratified by the members, it will be coupled with their Victory Scholarship, and one or the other will be awarded every year and rank equally in prestige and value.

The Victory Scholarship not only commemorates the result of the greatest war in our history, but will also commemorate for us the happy domestic peace which has descended upon our profession as a result of the amalgamation of the R.I.B.A. and the Society of Architects.

Following upon this alteration in the Soane, the Tite will become in future a more junior prize and also be awarded annually, forming the bottom rung of the ladder to which the President has referred. In future minimum standards of education will be set up for entry to these prizes instead of maximum age limits. The *en loge* system will be introduced, and generally the conditions of setting and judging them which are

used for the Prix de Rome will be followed by the R.I.B.A. It is hoped by this co-ordination that the confidence of the students in all our schools will be fully restored and the result seen in an even keener competition than we have this year for the blue ribands of the student's career.

It ought to be recognised by all schools and by all students that the winner of these R.I.B.A. prizes, the Soane, the Tite, the Pugin, the Measured Drawings, the Essay, and we hope in future the Victory, will establish for himself a reputation at the beginning of his career which will be invaluable to him. If he can climb to the top rung and reach the Prix de Rome or the Jarvis, so much the better.

The alterations proposed in the prizes, other than those for design, I will deal with in connection with the detail criticisms as I come to them.

The first prize to take in detail to-night is the Tite Prize.

Twenty-six sets of drawings were submitted for this, the principal prize for design given this year. The subject was a small museum upon a small promontory close to the ruins of a small Temple of Vesta and on the site of ancient excavations. The museum was intended to house the more valuable discoveries.

Taken as a whole, the standard of these designs is probably higher than in any year since the war, and the jury was particularly glad to note that the methods of presenting them are in most cases quieter and simpler than of late. The colouring is less bizarre and the buildings are shown without a too exuberant use of scenic effects. There was one very noticeable thing which appeared in nearly every design except the winning one, and that was a failure to grasp fully the true intent of the programme. I was especially asked by the jury to impress upon students the importance of studying very carefully the programme before beginning a design. In this case the programme clearly intended the museum to be a small one and not to conflict either in character or size with the Temple of Vesta. In some of the designs it is difficult to discover the temple at all, in most the museum completely dwarfs it, in others the style adopted is such as to compete instead of harmonise with that of the Temple.

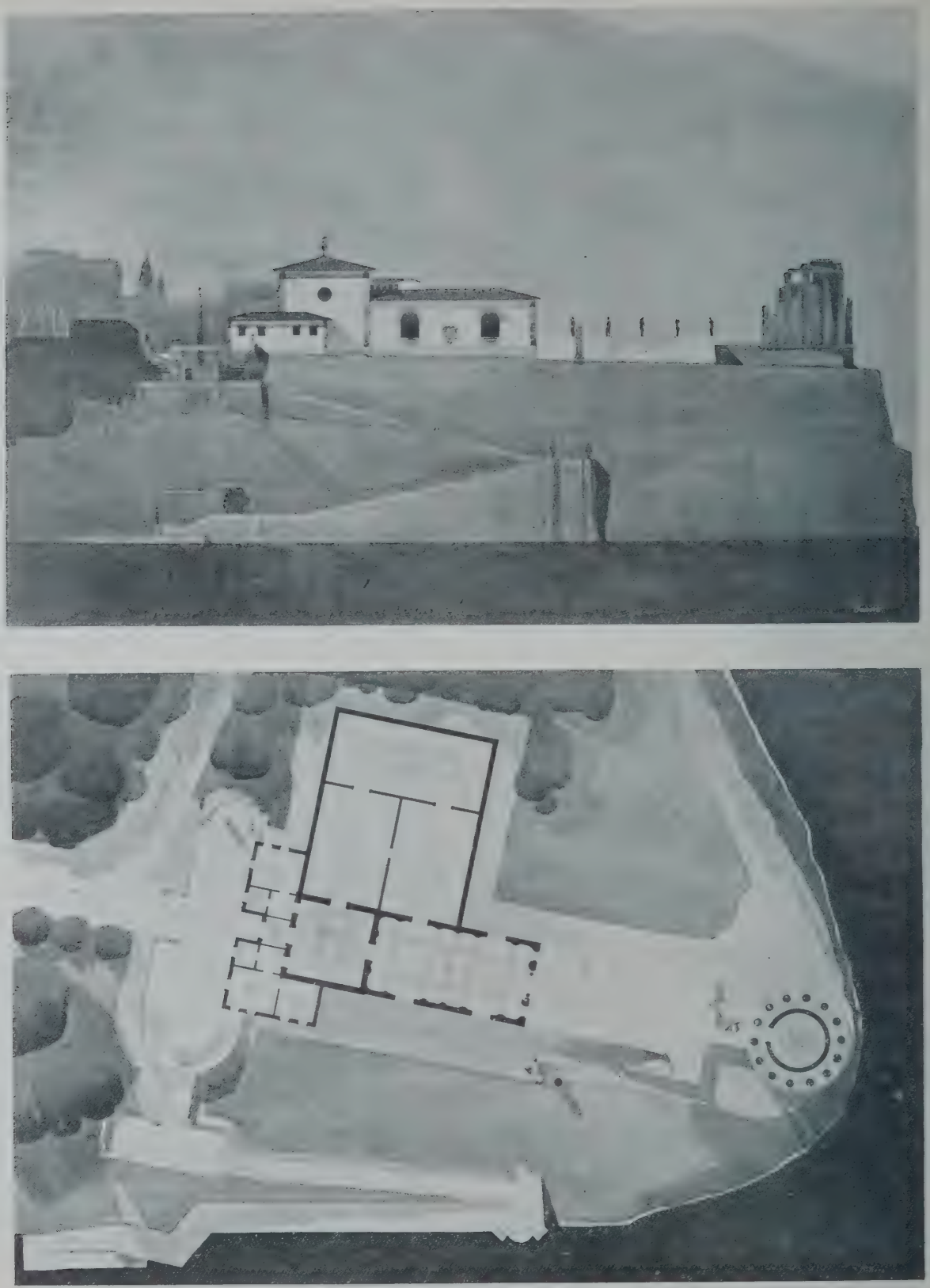
For the benefit of those who have not had an opportunity of studying these drawings, I have had some slides made, which, with your permission, I will now show. These will, I hope, make my meaning clearer.

Here is the plan of the winning design. It is very simple, but reveals imagination and thought—in the opinion of the jury by far the most successful solution of the programme. The museum is placed between the Temple and the main approach from the ruins, so that a visitor on entering the building would see the Temple as the culminating point of a vista, upon the side walls of which would be arranged the smaller archæological fragments. The side galleries are more or less concealed by a squat tower on the axial line, and the secondary approach from the water is well arranged. The whole scheme is an excellent example of a plan which uses the principles of axial planning only to the extent of emphasising the main purpose of the building, and with that achieved the author has been content to let a natural arrangement of layout do the rest. The elevation contains the same qualities as the plan, and by its sensitive restraint does reverence to the Temple. The draughtsmanship does not reach the same standard as the design.

This design won the prize because its author brought into play the one vital quality of imagination which is necessary to any work of art, and coupled with it a proper sense of proportion and common sense—added necessities in the case of the art of architecture. On behalf of the jury, may I congratulate Mr. Beaty-Pownall on a very charming essay in design. Certificates of Honourable Mention were awarded to " Key," by Mr. Scarborough, and " Chianti," by Miss Alison Sleigh, both distinguished for good draughtsmanship.

" Key's " plan was spoilt by a too pretentious approach to the museum from the Temple, but his scheme of placing the Temple some distance away from the museum, and below it on a little eminence of its own, is an interesting though not quite successful attempt to avoid the dwarfing effect I have previously described. The elevation is good if not exciting, and shows a knowledge of Italian architecture. " Chianti " attempted a too ambitious plan and too much originality of a rather doubtful kind in the elevation. The Tite is meant, I would remind the author, for the study of Italian design. Some of the details used, such as the cornices, would require a great deal of imagination to bring them into this category. Of the draughtsmanship I have little but praise, except for a suggestion that in future the author should be careful to avoid by over-elaboration a certain confusion which is very evident in the elevation.

Of the other designs sent in there are two sets of twins startlingly alike. If either set of twins had been in the running for the prize it would have required the judgment of a Solomon to part them. Fortunately, Solomon's wisdom was not required. It may not, in this connection, be out of place to remind competitors that these prizes given by the Institute are awarded for individual talent, and any suggestion of co-operation is easily seen by the jury and discounted. In the future competitors will be well advised to avoid the co-partnership idea. This is, no doubt, one of the dangers of the school system, for at any exhibition of student drawings to-day it is possible to walk round the room and pick out the drawings that come from par-



DESIGN FOR A SMALL MUSEUM. BY D. H. BEATY-POWNALL
(Awarded the Tite Prize)

Design for a Small Museum. By Miss Alison Sleigh
(Awarded Tite Certificate of Honourable Mention)

ticular schools by the manner of their design or draughtsmanship. It is well for students to realise that the mannerisms of a school count for little or nothing with juries, whose sole object is to try to find the man who has the finest sense of architecture and to get behind the method of presentation to the real thing underneath.

In future the Tite will be set and judged on similar lines to the Prix de Rome and the preliminary stages done *en loge*, with the result, we all hope, of eliminating to a large extent the dangers I have been speaking about. Before passing on to the Pugin I should like to mention the following designs as coming next in order of merit: " Snowy," " Sand," " Plot," " Penates," " Frog," and " Ave atque Vale." Of some of these I have slides chosen to illustrate particular points.

The front elevation by " Snowy " is drawn in monotone ; it is a good, straightforward piece of Italian design, and is, in my opinion, one of the best drawings in the room. I could wish the plan was finished in the same way instead of tinted with a laborious criss-cross pencil pattern. However, this design must have run " Chianti " very close for a mention, and it reached a high level in plan and elevation. " Penates' " is another good design, well shown in a charmingly coloured set of drawings.

The next slide I have shows the elevation of the design by "Porphyry," and it is chosen for some rather remarkable pen-and-ink draughtsmanship, not for its design, which is thin in detail and a long way below the standard of some of the other competitors ; but I hope the author of it will try again when he has had more experience of design and that his talent for pen-and-ink drawing will continue to develop. The next slide shows the design under motto " Vela Rossa," which was not commended by the jury, except for its draughtsmanship. It was considered, and I think rightly, that the museum was set too close to the Temple, and the whole group of stepped loggias and Temple has a rather crowded and uncomfortable look. The elevation is, however, shown in a fine colour drawing.

My last slide shows " Ilium Fuit's " design, or rather a half-inch detail of it, and I have chosen this because, if a little laborious, it is an earnest attempt to show his design in a really complete way. The treatment is actually a little too elaborate for a small museum on such a site, and the design generally suffers from an attempt to make the building too important, but it is obvious that this student has spared no pains and given of his best.

Time does not permit of mention of more designs, but for interest and a high level of work this year's Tite prize comes high in the history of the competition.

The Pugin.—Four sets of drawings were submitted for the Pugin, but only two were really up to Pugin standard. The unsuccessful competitors showed considerable promise, especially Mr. Micklethwaite, and it is hoped that he will not be discouraged from competing again.

The winner, Mr. D. H. McMorran, undoubtedly deserved his success. His choice of subjects and his sketches are better than Mr. Williams's, who was awarded a mention and £10. Mr. McMorran's measured work suffers from a certain mannerism of pencil shading, which looks well at first sight but with continued repetitions becomes tiresome, while Mr. Williams goes to the opposite extreme and makes his drawings too mechanical. He has devoted too many of his drawings to one particular subject for such a prize. Of both, however, I think it may be said that their work, if not equal to that of some of the Pugin winners of the past, is equal to the best of average years.

The Grissell Gold Medal.—Only one set of drawings was submitted for the Grissell, but it is an exceptionally good set and equal to any that have been sent in for many years. The Grissell, as you know, is intended for constructional design, and I have noticed when visiting the schools of architecture that constructional subjects often result in excellent designs. This should, of course, be the case, and students should remember that thought and study of constructional problems is of great value in after life and is never time wasted. The subject for the Grissell this year was a dance hall, and Mr. Cameron has produced a design which looks like a dance hall. The touch of modernity which he has introduced is entirely suitable in such a building. The jury have in this case given me a written criticism, and I cannot do better than read it and congratulate the author, Mr. Cameron, on a very successful piece of work :

" The general arrangement, draughtsmanship and treatment are excellent, and we consider the project of a high standard and eminently worthy of the award. Criticism in detail should include the following :

" 1. The arrangement of steel-work at junction of truss and stanchion is weak.

" 2. The truss bearings are weak. The buckling length is only reduced in one direction and not in the other.

" 3. The calculation of stresses in stanchions is careful, but ignores stresses due to deflection of truss and racking of building.

The Owen Jones.—Four sets of drawings were submitted, and the prize was awarded to Miss L. Payne for a fine series of colour decorations of tiling, Turkish and Spanish pottery, embroidery, heraldry and stained glass applicable to architectural design. I seem to trace in Miss Payne's work the influence of Professor Richardson's new course of colour decoration at London University. To secure a winner of the Owen Jones so soon augurs well for the future of the course. For some reason which the jury did not understand

Miss Payne submitted in addition to a well chosen series of drawings a design for a large building, which appeared to be quite irrelevant, and they wish to make it clear that this design was not taken into account in giving their award.

The other competitors ran Miss Payne close, but their subjects were not so suitably chosen, nor was their colour sense so true. One sheet of wall tiling by Mr. Hollinshead and the Southern Italian carved woodwork by Mr. Dinkel made striking drawings.

In future years this prize is to be definitely brought into more intimate contact with architectural design by selecting, in the first instance, the best three or four sets of drawings of coloured decoration and then giving to the selected competitors a subject for an architectural design, in which the treatment of colour is the paramount issue.

The Measured Drawings Prize.—Five sets of drawings were submitted, and the prize was awarded to Mr. Richard W. Briggs for a good set of drawings of the Panthéon in Paris. You will see from the slide that these are good clean, straightforward pencil drawings, rather mechanical perhaps, but they thoroughly illustrate the subject. A mention was given to Mr. J. A. Coia for his set of drawings of the " Salute " in Venice—one of the most picturesque buildings in Europe when seen in reality, but I rather doubt the value of measuring the whole of it in detail. An elevation of such a curiously planned building as this cannot possibly convey the real appearance of it. The jury consider, and I agree, that the

The Panthéon, Paris. By Richard W. Briggs
(Awarded the Measured Drawings Medal)

winner is the best draughtsman, and his surveys are more complete. The drawings of the " Salute " are rather too slick, and the surveys do not appear to be nearly so full. In addition to these two sets, there is a good set of drawings of Wren's work in the Fountain Court and the Garden Front of Hampton Court, some beautiful pencil drawings of Baalbec, and a poor one of the FitzWilliam Museum at Cambridge. The author of this set would do well to try his hand at some less ambitious subject.

This Measured Drawings Prize has tended to become a sort of *tour de force*; enormous buildings are measured in minute detail and the drawings completed to the last brick. Everyone must admire the thoroughness with which they are made, and as complete records they are often very valuable, but it is a question whether it is not being overdone in the case of students who might be spending their time better by more varied work. It is proposed, therefore, in future to bring the Measured Drawings Prize into line with the Pugin (without the limitation confining it to mediæval work), and to encourage the sending in of students' work done over a period of years, including sketches as well as measured drawings. It is felt that this will best fulfil the purpose of the prize and be an encouragement to the schools to include plenty of measuring in the school courses. Some day, perhaps, it may be found possible to found a bursary for the encouragement of measured drawings of large buildings for men of more mature age.

The Alfred Bossom Prize.—Three sets of designs were submitted for this prize, which was awarded to Mr. F. E. Bennett, under the motto " Taxi." This is the first competition for it. It is an interesting prize given for competition among Associates by Mr. Alfred Bossom, an American architect. Its main purpose is to encourage architects to study not only the design and plan of their buildings, but also such questions as site values, rentals, etc. Competitors must choose a site in a town selected by themselves, and submit such particulars of their scheme to the jury as they would have to submit to a commercial firm who contemplated building, in order to prove that the speculation would be likely to be successful. How far such a prize is likely to lead to the advancement of good architecture I, for one, am very doubtful; but this year my doubts are needless fears, for it has resulted in an admirable design for a large block of business premises on an island site in, I believe, the city of Manchester.

Mr. Bennett has evidently studied the requirements of a big store of this kind. His plan appears to fill the bill, and his elevations would do credit to any street. He has tackled boldly the shop front problem, and by the arrangement of his entrances at the ends of the building, at the base of a species of tower, he has largely got over the risk of giving his building the appearance, so common to many of our shops, of being balanced unsteadily on a continuous sheet of plate glass. These towers also relieve the monotony of the upper parts of the elevation. The jury had the assistance of business men who satisfied themselves that Mr. Bennett's financial calculations were correct, so of these I will not presume to speak. The other two designs submitted were not in any way to be compared with the winner's either in design or, I understand, finance.

The Essay Prize.—Five essays were submitted and the prize awarded to Mr. F. Pentland Chambers, with a certificate of mention to Mr. Martin S. Briggs, under the motto " Let us now praise famous men and our fathers that begat us."

The title of the winner's essay is " The Æsthetics of the Ancients." It shows considerable thought and research, and the author would probably be the first to admit that his essay would not have been written had he not had access to the works of Mr. Lethaby. His chief contention is very contentious, that the " purely artistic values " were wholly unknown to the ancients. It contains some original thought and considerable ability in marshalling the arguments. Of its literary merit I am not quite so convinced as some members of the jury. The author is too fond of long, tongue-twisting words. These may be necessary to his subject, but to the average reader they would seem to be more suitable as a test for drunkenness in a police court than as embellishments of an essay. Some of these are "eschatological," "objectification," "æstheticiān." Further, such involved sentences as the following do not render his meaning less obscure: " The irony of the whole modern position is demonstrable in that what arts we still have . . . must be estimated by values which, as in their part, their creators have no consciousness of." The great essayists of the past did not impose these trials upon their readers, and I hope before publication some revisions will be undertaken.

The second best essay, on "The Architect in History" is to my mind a most interesting, though perhaps not so stimulating a piece of work as the first. It is a solid, serious effort and complies with the condition which requires competititors " to make a useful contribution towards knowledge." It deals with a subject which is much in our minds nowadays, especially those portions of it which deal with training, and I hope the author will secure its publication, perhaps in a condensed form. I confess to some sympathy with the author of this essay in that he did not catch the jury's eye.

The third best essay is that one dealing with the " Architects who succeeded Christopher Wren and were engaged in building the fifty new churches in the London District." This also is an appropriate subject

at the present time, when the Church itself wants to pull them down again and is making determined efforts to achieve its object. This essay is illustrated with pen-and-ink sketches, which would have been more helpful if they had been more numerous and more carefully drawn. Many of the churches are not illustrated at all.

The other two essays are involved and confused and do not merit serious comment.

The Arthur Cates Prize.—No competitors entered for this prize, and the fact that no competitors have done so now for ten years is a justification of the Council's proposal to seek an alteration in the conditions which govern it. It will, we hope, if permission is obtained, be available for a more useful purpose than at present. I can truthfully say that this last prize has been the easiest to criticise of all, and I must thank you for listening so patiently to my dull remarks about the others. May I add just one word to those students who are leaving the schools where their time has been largely spent in " esquisses " and ideal projects, on history and drawing from the life, and all the jolly, fascinating subjects of which the study of architecture is full, and beg them to remember that they are in the transitory stage between the ideal and the real, that there is much else the successful architect has to learn before he can fly safely. At first this other side may seem irksome, but it must, afterschooldays are over, be mastered first in practical work in an office and later in practice for themselves.

A student's paper with which I was once connected put this side of our troubles fairly concisely some years ago, when your critic was in this chrysalis stage, in a little rhyme which it may not be inappropriate to conclude with to-night :

" I dreamt last night such a beautiful dream
Of a sphere where Beauty reigns,
Where Art rules artlessly all supreme
And nobody's heard of drains—
Where the Sisterly Muses must need elect
To work in affinity,
The Painter, the Sculptor, the Architect,
A peerless trinity.

. . . . .

But
I awoke with a start to a letter long
Beginning
" Dear Sir,
May we
Draw your attention to something wrong
In your Drawing 53 ?

. . . . .

" The bathroom is far too small for the bath,
Though it might go in with a shove ;
At present it's out on the garden path,
And the Clerk of the Work's in love.
The wet has come in through the study wall
And the paint has begun to run,
The ceiling has cracked in the entrance hall,
Yours faithfully,
Jones and Son."

Those are the sort of little troubles which are or may be a daily irritation unless you realise that there is a practical side to our Art, which sooner or later must be taken into consideration.

Votes of Thanks to the President and to Mr. Maurice E. Webb

Mr. J. C. SQUIRE (President of the Architecture Club) : The paper we have just listened to, and your address, Sir, have been addressed specifically to young architects, and I am not quite young, and I am not quite an architect. On the other hand, I do recall, to my comfort, the remark which you quoted at an earlier stage of the evening : " If a man will not work, neither shall he eat." You, Sir, entertained me at dinner before we came here, and I feel, after that, that I can do no less than fulfil the function.

I was struck, in the course of your remarks, by one thing in particular. You were surveying the way in which the field of architecture had been developing of recent years, the way organization had spread, the way architects had got together and begun to co-operate more than in the past, the way the whole profession was solidifying, and, in particular, the way in which architectural education was organised. You said that although that was all, no doubt, a very good thing, you could not help feeling, for yourself—you who had never had so many hand-rails—that a certain amount of fun had disappeared. In a manner I sympathise with that feeling ; but, on the whole—speaking as a member of the lay public in the middle of a professional audience—I should say it was just as well we should have a little less of the fun. You will remember the old fable which used to be in our school books when I was younger, about frogs who were being pelted with stones by the boys, and who croaked very loudly in protest. And they were told it was only in fun. They retorted : " It may be fun to you, but it is death to us." In the same way, architects were having any amount of fun in the nineteenth century, and the public, who are being pelted by their stones, have very considerable ground for complaint. Architecture must be, in large degree, perhaps above all other arts, traditional, communal ; and teaching and co-operation have

to be important elements if architecture is to flourish. You cannot afford the degree of eccentricity in the pursuit of architecture which we are compelled to see, and which most of us do not always welcome, in the other arts. In so far as all this organisation is helping to develop a more continuous, an evener, a more agreed tradition amongst our architects, it seems to me that there is everything to be said for it, and nothing to be said against it.

I do not know whether, when I was called upon to propose a vote of thanks to you, I was also meant to say a word about Mr. Webb, or whether there is a separate motion on the subject for Mr. Webb. But I cannot sit down without saying that I enjoyed Mr. Webb's explanation of these drawings most thoroughly, and I am sure everybody else did too. One or two incidental points in his remarks struck me. I could not help being a little intrigued by the quotation he read from the essay. I rather gathered, though he did not say so explicitly, that there had been something of a fight on the jury, consisting, I suppose, entirely of architects discussing architecture, when they were debating literary style. In this matter, of course, architects are laymen. I suspect that man could write rather good English. The sentence quoted was one against which you could urge a certain number of points, but the faults were those of a man wrapped up in his subject and eager. It is the fault of youth, which is enthusiastic and tumbles its English about. I should have liked the best sentence to have been quoted, as well as the worst.

Mr. WEBB : I want to be fair to the author. The jury were unanimous that his essay was the best, and the opinion I expressed to-night was only my own. There was no fight on the jury ; they expressed their opinion in writing separately that his essay was the best, and it is due to him that that should be said.

Mr. SQUIRE : I did not mean my remark to be taken in that way. If there was not a fight, I am extraordinarily surprised. I have never heard a body of men discussing architecture without almost coming to blows.

There was one thing that shocked me, and that was, I understand a gentleman, a student, produced an enormous plan for dealing with a site in London, and his financial calculations were deemed sound by a business man. That precocity seems to me almost dreadful.

Dr. ALBERT C. SEWARD (Vice-Chancellor of Cambridge University) : Mr. Squire, who has just proposed the vote of thanks, told us that he did not feel himself well fitted for the task. I am much less qualified than he is. He, I notice, is President of the Architecture Club ; I am not even a member of any architecture club. I was particularly pleased to hear what you said, Sir, about schools of architecture, and especially your reference to our comparatively new school at Cambridge ; it was a great satisfaction to me to find that this year, for the first time—there has not been very much time before—one of our students gained a prize, the Essay Prize.

I cannot say I know very much about the Cambridge School of Architecture, but I have always, from the foundation of the school, taken a very great interest in it. Architecture is not my subject, but there is no subject in which I have for so many years felt such an interest outside my own particular line of work. I, personally, am very keen indeed that our school should prosper and become a very flourishing part of the University, and I believe it will do so.

I was very glad, Sir, to hear what you said in your address about the advantage—perhaps I should say the disadvantage—of students receiving over-much help. I have often felt, and perhaps this is a natural tendency on the part of those of us who are growing old, that in recent years there has been a great deal too much spoon-feeding—if I may use the expression —at all events at Cambridge. Perhaps I ought not to say this in public ; but there has been a tendency and I am sure it is a bad one, to help people too readily, instead of giving them the opportunity, or making it necessary, to use their own imagination and determination to the fullest extent.

I should like very cordially to second this vote of thanks.

The PRESIDENT : I thank you for the kind way in which you have listened to my remarks.

There is not a great deal I need dwell upon in the remarks of the proposer and seconder ; but I should like to say that the proposer rather misunderstood the use that I made of the word "fun." My idea was not to make fun of things at all. Perhaps I ought to have said "interest." I am certain of this : that anyone who has the real spirit of the mountaineer in him, would rather climb the rocks himself than have a hand-rail to help him up. Therefore I think he gets more fun if he does not get too much help.

I should like to propose a vote of thanks to Mr. Maurice Webb for the very able way in which he has criticised the prize work of this year. It is not an easy task to criticise work of this kind. If you have to speak the truth, you are liable, sometimes, to wound feelings, and I think Mr. Webb has succeeded very admirably in avoiding Charybdis on the one hand, and Scylla on the other, and I have the greatest pleasure in proposing a vote of thanks to him for his criticisms to-night.

Mr. MAURICE WEBB briefly responded.

Romanesque Sculpture of the Pilgrimage Roads*

BY SIDNEY TOY [*F.*].

A THOROUGH knowledge of the sculpture of the Middle Ages is as essential to a true understanding of the forces by which our ancestors were governed as the study of their manuscripts. By this means the trend of their thoughts, their aspirations, and the failings to which they were subject found ready and relatively permanent expression in stone, and may be read easily to-day by human beings actuated, more or less, by similar sentiments. Probably at no period was such profuse use made of this means of expression and decoration as during the eleventh and twelfth centuries. In the religious buildings of this period practically every salient feature was impressed into service and carved into some form, natural or allegorical, and even whole façades were covered with sculptured embellishment. Subjects were chosen from a great variety of sources, though those from the sacred Scriptures and the mediæval books of sacred legends were most commonly employed. These are treated with a freedom and individual licence of rendering which assists in no small measure in providing a most clear indication of the sentiments of the age. We are fortunate in that there still remains, particularly in France, Spain, and Italy, a considerable amount of this invaluable art.

La Clarité-sur-Loire (Nièvre)
Lintel of southern portal, now inside church. Presentation in the Temple

The work by Mr. Porter consists of one volume of text and nine volumes or portfolios of photographic plates, six of the portfolios being devoted to examples from France, two portfolios to examples from Spain, and one to those from Italy. The photographs generally are distinct, are chosen from numerous religious buildings, and are of sufficient size to illustrate the subject clearly.

The text is divided into two parts, the first dealing

**Romanesque Sculpture of the Pilgrimage Roads.* By A. Kingsley Porter. [Boston : Marshall Jones Company. 1923.] Presented to the R.I.B.A. Library by the Author. 10 Vols.

with the influence of the Cluniac school on Romanesque sculpture, and the second of that exercised by the great pilgrimages of the Middle Ages, with particular reference to the pilgrimage to Compostella. This is preceded by a long and valuable list of dated monuments, from the tomb of Boëthius at Venasque, erected in 604, to the doorway of the cathedral at Altamura, built in 1316 ; and at the end of the volume there is a copious bibliography. In the first part the author deals at considerable length with the question of dated monuments, contending that generally the documentary evidence should be accepted as giving the actual date of the monument. He examines the reasons usually put forward for assigning later dates in order to make the buildings agree with archæological theory—namely, (1) that the construction of Romanesque buildings proceeded very slowly, and therefore may be of periods much subsequent to the dates of the documents recording their commencement, consecration, or even completion ; and (2) that the edifices under considera-

VÉZELAY (YONNE). Central portal, tympanum, central portion. Detail of the Pentecost, St. John the Baptist

tion were rebuilt after the dates recorded. In regard to the first he considers that, though the theory might hold good in respect to certain Gothic monuments, its application as a general rule to the Romanesque period is unreasonable. Often a first consecration marked the completion of the choir, and a second the completion of the whole church. In exceptional instances the consecration was hastened or postponed. " But to argue from such exceptional cases—I do not know of a single one in the twelfth century which can be proved—that all consecration dates are misleading is illogical and unwarranted." In respect to the second objection, although instances of immediate reconstruction might occur, it was certainly not the custom in the Middle Ages to pull down a new church as soon as it was finished. Romanesque art was not of uniform development, and the theory of a gradual evolution is therefore misleading. It is much more safe, he says, to trust the evidence of contemporary records than to rely upon archæological theory ; especially in view of the fact that whether such monuments as the golden altar of S. Ambrogio, Milan, be of the ninth or of the twelfth century, the sculptures of Cividale of the eighth or of the twelfth century, or the Baptistery at Florence of the

Santiago de Compostella (La Coruña) Catedral.
Portico de la Gloria. Central portal, northern jamb. Moses, Isaiah, Daniel, Jeremiah.

sixth or the twelfth century, are still points of dispute. The question of the assignation of a date to any given monument is not simple, and many buildings are perfect enigmas in this respect in that they present features which appear to overthrow all preconceived ideas founded on comparisons of mouldings and other details. This careful examination of the subject is therefore most welcome as a valuable contribution to the solution of a difficult problem. That the author is as emphatic in his deduction in cases where they appear to be arrived at from examination of illustrations only as in those derived from the study of actual monuments is a qualifying circumstance, but he has presented us with a thoughtful treatise which should receive the careful attention of all students of the period. His arguments are supported by many examples culled from an extensive field.

It is unsafe, however, to draw any conclusion as to the date of a building from one factor alone, either from documents relating to it or from its details. An old structure possesses a quality not easy to define and quite distinct from details, but which is of the very essence of the structure itself. It can be best described, perhaps, by the word atmosphere. This quality is more or less clearly stamped by every period—it is unlikely, for example, that there will be any question in the future as to the work of the twentieth century, build in what style we may—but it is a quality discernible only

Issoire (Puy-de-Dôme), St. Austremoine
Capital of Ambulatory. The Last Supper

by those who have a practical knowledge of construction and the development of its principles, and who have also grasped the spirit of the age under examination. It is only by a just balance of this fundamental factor with the documentary evidence and the details in each particular case that a satisfactory conclusion will be attained.

The important influence exercised by the pilgrimages to the shrines of saints on the development of mediæval art is examined at considerable length in the second part of the volume of text. The sculpture of the principal churches on the four pilgrimage roads to Santiago is compared in order to reveal the direct relationship it bears to that of the great church of the shrine itself and also the influence it shows of the Cluniac school. "The pilgrimages united the art of Europe and even of Asia. But the most important contribution of the pilgrimages to mediæval art was the group of sculptures produced in the twelfth century along the lower part of the road of St. James." The writer therefore examines in detail some of the sculpture of such great churches on the pilgrimage roads as Souillac, Angoulême, St. Sernin at Toulouse, St. Trophime at Arles, and St. Gilles, explaining the origin of some of the obscure subjects.

Throughout the whole of his treatise the writer keeps in direct touch with his illustrations, to which he makes continuous reference and of which there are over fifteen hundred. So that it is possible for the reader to follow closely the remarks made and—to the extent which a photograph will permit—to judge for himself of their value. The work is evidently the result of indefatigable labour and much painstaking research, and, whether his strictures are accepted or not, the writer has merited the unqualified thanks of all students of mediæval art.

St. Paul's Cathedral

The publication of the following statement has been authorised this week by the Commission of Experts who have been examining St. Paul's Cathedral since 1921 :—

"We hope to present to the Dean and Chapter in two or three weeks a detailed report giving the results of our investigations into the condition of the Cathedral, together with fuller reasons for the conclusions expressed in our interim report of December 29, 1924, and details of the methods of preservation therein suggested.

"Suggestions appear to have been made that the building is unsafe, and that those visiting or worshipping in the Cathedral incur a risk by so doing. There is no foundation, in our judgment, for any such suggestions.

"The methods we have recommended for strengthening the main piers of the Cathedral will, we are satisfied, if carried out, restore these piers to as good a condition as they were in when originally built, and the probability that any further work will be required is a very remote one. Had danger been imminent, or likely to occur in the near future, we should have recommended otherwise.

"We are in effect recommending a continuance of the work that has been carried out in the past 12 years by the Cathedral authorities in refacing two of the main piers, but with the important addition of first strengthening the interior of the pier. The preservation work already done by the Cathedral authorities includes also extensive repairs to the Lantern, the Stone Gallery, and the Crypt, and the money spent thereon has been wisely employed."

A meeting was held in the Vestry of St. Paul's Cathedral on the 27th January which was attended by the Dean and Chapter, the Trustees of the Fabric (the Archbishop of Canterbury, the Lord Mayor of London, and the Bishop of London), the Cathedral architect and the expert advisers, the Editor of *The Times*, and the Chapter Clerk. It was resolved :—

That a Committee be formed consisting of the Dean and Chapter with the Chapter Clerk, the Treasurer of the Fabric, and the Cathedral architect; the expert advisers; one member nominated by the Ecclesiastical Commission, one member nominated by the Royal Institute of British Architects,* and one member nominated by the Institution of Civil Engineers; and not more than four members—men of recognised public standing—co-opted by the Committee.

CORRESPONDENCE.

Dallinga, Lower Road, Fetcham, Surrey.

To the Editor, JOURNAL R.I.B.A.

DEAR SIR,—Having been intimately associated with the practice of conservation of ruinous arched and vaulted buildings by means of the internal consolidation of their masonry, I feel impelled, in the interests of preserving St. Paul's Cathedral, to point out the extremely grave danger which attends the attempt to repair the eight main piers of the dome with cement grout applied under pressure and by the piecemeal replacement of damaged facing stones.

Cement grouting as a probable cure for damaged masonry has been put to the test on several ruinous

* Mr. William Dunn [*F*] has been nominated to represent the R.I.B.A. (see p. 235).

buildings during the last twelve years and has been found wanting.

The basic idea of attaining homogeneity in the several disunited masses of masonry is admirable, but this homogeneity is not, in fact, produced by means of cement grout except in a limited number of special cases where all conditions have been favourable to its application and the loading of the masonry has not been excessive.

And, supposing the conditions were favourable at St. Paul's Cathedral, as the Commission's second Interim Report confesses that they are not, the increase of strength would be in no way proportionate to the intense stresses in the piers and to their conflicting lines of action. In properly designed measures of repair the material means proposed and the forces which they are to meet and control must obviously be considered together. In large decaying masonry structures where the loading is eccentric, grouting is altogether inadequate ; and even conscientious, workmanlike rebuilding of damaged portions in solid stone and cement has been found powerless to prevent movement of important masses. Where the forces inducing movement are of sufficient magnitude the fractures take place indifferently and pass alike through cement joint or sound stone.

Additional works, such as the provision of reinforcement properly calculated to apply to the conditions of loading, become necessary in such cases, and each case must be considered on its merits.

To enable this calculation for additional works to be made successfully the building must be studied and comprehended as a complete entity with all its conflicting interplay of arch and buttress pressure and eccentric loading ; for, though the main piers may be suffering from the weakness of their own construction with an incredibly feeble rubble core, they are also being bent and burst by movements induced by the oblique arch thrusts set free and transformed from dead to live loads by the partial, but ever increasing, failure of the buttress system.

In an admirable article contributed to the JOURNAL of 24 January by Mr. William Dunn the difficulty of a proper analysis of the loading upon the piers is pointed out, and the most astonishing and mutually contradictory statements have been made by eminent engineers upon the subject.

Wren's arrangements of drums, diaphragm walls and counterforts are indeed complicated, and, to quote Mr. Dunn, are such " that it passes the skill of man to determine the exact intensity of the stresses."

Now, while this may be so at present, the skill of man must be directed towards the solution of the problem, for, while the loading is baffling to the ordinary methods of calculation, it is possible, by means of a process of my invention to obtain a thoroughly clear view of its nature and of the actual and relative importance of the several parts of Wren's intricate but reasonably designed structure.

At any moment during the operations, the pressure of the grout or the removal of a facing stone may occasion a readjustment of the arch play that can only result in disaster, for the experiments are taking place upon piers to which no banding has been applied and beneath arches for which no centres have been erected.

It should not be necessary to point out in a scientific journal the probable and almost inevitable effect of this most extraordinary neglect of elementary precautions, but the fate of the central tower of Chichester which fell during the too long delayed shoring operations is a clear indication of the result of procrastination.

While I believe that Wren's great dome may still be saved intact by the immediate application of comprehensive measures of repair directed towards the improvement of the building as a whole as well as in its separate parts, I regard the present patching proposals with horror as likely to bring about the ruin of our national monument and to make a futile sacrifice of the lives of those employed upon the works.—Yours faithfully,

WILLIAM HARVEY.

Halley House, 46 Vauxhall Bridge Road, S.W.1.

2 February 1925.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—As assistant for some years to Mr. Somers Clarke, who preceded Mr. MacCartney as Surveyor to St. Paul's Cathedral, I may perhaps claim to possess some acquaintance with the anatomical structure of the fabric and its existing state of decay.

In these circumstances may I venture to suggest that the proposals outlined by Mr. William Harvey for controlling the movements which are still active within its vital parts should be examined without delay by (*a*) the present Commission of Architects and Engineers, and (*b*) by Dr. Stanton, of the National Physical Laboratory. The proposals referred to appeared in the *Architects' Journal* of 14 and 21 January 1925.

In the meantime, I believe that members of the Institute would welcome an opportunity of hearing Mr. Harvey's own exposition of his views in the form of a public lecture in our galleries.

The general public is rightly much exercised in mind over the threat to one of its most cherished possessions, and it does appear to be desirable that the profession as a whole should explore every avenue of investigation which is likely to lead to the preservation of Wren's great dome for future generations.

Mr. Harvey has spent most of his professional life in studying great historical buildings in relation to their balance and their tendencies to movement, and is steeped in knowledge of an unfamiliar character which directly bears in a surprising manner upon the great problems presented by St. Paul's.—Yours faithfully,

FREDK. CHATTERTON [*F.*].

ARCHITECTS AND WORKMEN A CENTURY AGO.

The Sir John Soane Museum,
13 Lincoln's Inn Fields, W.C.2,
20 January, 1925.

To the Editor, JOURNAL R.I.B.A.

SIR,—Those who read Mr. Maurice Webb's article in the JOURNAL of 10 January may like a specimen of how these things were done a century ago. Thos. Martyn, to whom Sir John Soane writes in a Pauline manner, will be found in the list of Bank tradesmen in chapter 4 of *The Works of Sir John Soane*. He was employed in many another of Sir John's buildings. The actual supervision of work, with the contact that it involves, will no doubt eventually be recognised as an essential part of an architect's training. Without fussy interference, we can at any rate discourage the idea that we can be impressed by a sudden increase of men, who disappear when our backs are turned. I cannot think such methods, of which one has heard rumours, would ever be adopted by reputable firms. I feel convinced myself that the interest of the workman in the work is an essential part of a good building, and I know very well that it exists now as it has in the past.—Yours sincerely,

ARTHUR T. BOLTON,
Curator.

WILLIAM TAYLOR TO SIR JOHN SOANE.

Home Office Whitehall,
31 March, 1834.

SIR JOHN,—The kindness you have on many occasions evinced towards John French (who after being near 30 years employed in his trade of carpenter, at the Bank, has recently been dismissed) induces me to take the liberty of Soliciting your further Kindness in his behalf—,with a view if possible to get him reinstated in his Employment.—I think it right candidly to explain that the cause of his dismissal was that of absenting himself without leave from his Work, and drinking, and when he attended to resume his Work he was told by the Foreman to go about his business, a result which he had a right to expect and perhaps richly deserved, for he had no excuse to offer for his absence, and his spirit was too high to apologise for his conduct, and beg to be forgiven—I am too sensibly aware Sir John that this was not the first time, and but for your kind interference, he would probably been dismissed before but he appears now truly penitent and declares nothing shall ever induce him to commit himself again, I do really think he has seen his folly, and is sincere in his promises of amendment, and that if through your kind interest he could be reinstated, he would be truly grateful and not again offend. Altho' his manners are very blunt, he possesses many good points in his character, is an excellent Workman, and well suited to be employed in such a place of trust as the Bank, for I am persuaded there was never a man more Strictly honest; I have known him well for many years, and feel a deep interest in his welfare having married his Sister; I have often heard of your Kindness to him, and urged him to make his present situation known to you, but this however he could not summon up resolution to do, and thus it is that I have ventured to address you on the subject a liberty which I hope you will excuse,—he has now I am sorry to say expended his last shilling, and having myself a Family of eight Children to support, it is not in my power to render him much Assistance. Probably Sir John a few lines from you in his behalf, to Mr. Cottrell,* the Bank Surveyor would have the desired Effect, and induce that Gentleman to permit French to return to his work, which will confer a very great obligation on him, and no less so on

Your most obedient Servant
WILLIAM TAYLOR.

I beg to add Sir John that I am one of the King's Messengers attached to this Office, and in case you should desire to see me on the subject of this intruding Letter, I should be happy to have the honor of Waiting on your at any time you may appoint.

SIR JOHN SOANE'S REPLY.

L. I. Fields,
3d April 1834.

SIR,—An application having been made to me requesting my mediation in favour of John French who has been recently discharged from your employ by the Foreman at the Bank, after having been nearly 30 years in the service of your Father, and yourself in consequence, as I am informed, of some irregularity in his conduct for which he now sincerely repents; as I have always (notwithstanding his failings) entertained a high opinion of his industry and integrety I feel much interested in his welfare, and should feel greatly obliged by your personal enquiry into the circumstances of this dismissal, and if possible his reinstatement in your employ.

I am, Sir,
Your very obd st
J. S.

To MR. THOS. MARTYN,
GREENWICH.

THE WREN SOCIETY.

The first of the annual volumes published by the Wren Society is devoted to St. Paul's, and in view of the present condition of Wren's masterpiece, as revealed by the Expert Committee's report, the reproduction of over fifty of the architect's original drawings for the Cathedral is of more than general interest.

From these drawings, which are reproduced, most of them for the first time, from the All Souls Collection at Oxford, can be traced the evolution of the design from the early pre-Fire sketches to the conception as finally realised in the form we see it to-day.

A complete set of the "Warrant" drawings is given, and other interesting plans such as the "Model" show the tireless search of the artist for a form worthy of his great enterprise.

Only a limited number of these valuable records have been printed, and members and students wishing to obtain a copy should make early application to the Hon. Secretary, Mr. H. Duncan Hendry, A.R.I.B.A., 43, Doughty Street, London, W.C.1, enclosing a subscription of one guinea. The volumes cannot be obtained except through the Society.

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* No doubt, Professor Charles Cockerell, R.A., who succeeded Sir John Soane as architect of the Bank on his retirement, 16 October, 1833.

Applications in Building and Foundations of Modern Engineering Construction

Discussion on Dr. Oscar Faber's Paper (see JOURNAL, 24 January, pp. 165-185)

MR. E. GUY DAWBER, VICE-PRESIDENT, IN THE CHAIR

Mr. H. D. SEARLES-WOOD [*F.*]: I have great pleasure in proposing a vote of thanks to Dr. Faber for his very valuable Paper on Foundations. It is a subject that all architects are deeply interested in, and Dr. Faber has treated it in a way which gives those whose mathematics are not very advanced valuable results in the tables which all can understand and use without testing them by working out the formulæ. As I understand Mr. Etchells will second the resolution, I will leave to him, and also the eminent experts whom we have with us to-night, the mathematical part of the analysis.

I happened to be concerned in the building adjoining the raft in Lower Thames Street, and I watched it being constructed with great interest, as we were extremely anxious to see whether the raft was or was not connected with our foundations. And that is a point which is rather interesting to us all.

There is one thing I would very much like to ask Dr. Faber about. He is carrying out a very important building over the Mansion House Station of the District Railway, and as I have built quite close to the same spot I am very interested. When I was building there I was very anxious to know what was the effect of the vibration produced by the railway trains on my foundations; and what I would now like to know is, what allowance he has made for those steel stanchions which go down below the lines, because there is constant vibration all the time.

The Shanghai examples he has given us are very interesting. I had particulars of a failure in a factory built many years ago where the building failed, though the central stanchions in the warehouse were calculated to take up all the live loads, and the surrounding walls settled through insufficient foundations. The surrounding walls were calculated to take the dead loads. The consequence was that the building was wrecked by the walls going down and the stanchions going up. Of course, such a failure could not occur where reinforced rafters were used.

I would very much like to know what the effect on the surrounding buildings is of a huge building like the Shanghai Bank going down 12 inches. It must be an anxious time for the other people who have buildings all round when they see this sinking taking place.

The interesting results of the cement testing and the valuable tables of the supporting powers of various subsoils, both suggest the importance of a revision of the London Building Acts, which are now being considered, as well as a revision of the British Engineering Standards Association Specification for Portland cement.

I have very great pleasure in proposing a vote of thanks to Dr. Oscar Faber for his contribution.

Mr. E. FIANDER ETCHELLS [*Hon. Associate*]: In response to your invitation, Sir, I rise to second the vote of thanks, and at the same time I should like to make a few remarks.

In the first instance, the Institute is to be congratulated on having such a useful Paper presented before it; it is a very masterly summary of a very difficult problem. And, because the problem is difficult, we are not all agreed upon the answer. Perhaps at the end of to-night's discussion we may be a little nearer, but because of the multifarious disuniformities of Nature, the question will never be finally settled to everybody's satisfaction, and in the centuries to come, if this Institute endures so long—on account of the stability of its foundations—the then members will still be discussing the burdens of an oppressed subsoil.

I should not myself blame Rankine with regard to the careful assumptions he made with respect to the clay. I know the very clay which Rankine dealt with in the grounds of Glasgow University; it is a clay of a very ununiform nature. Some parts are slippery and other parts are crumbly; and, with that prudence which is so well known as a northern characteristic, he chose the safer course. The glacial clays at Glasgow and the London blue clay at the depth of the London Tubes are very dissimilar materials.

With regard to the Paper, it certainly has removed some of the problems from the realm of opinion to the realm of ascertainable fact; and that is one of the advantages of science. Science is impersonal. The appeal is to instruments and to Nature herself, and not to the uncertainties of opinions influenced by our temperaments and the complexities of our contractual obligations.

With regard to the general formula for foundations, it has the advantage of including the extreme cases under one general rule, and it has an austere beauty which to the mathematician is as charming as the serene proportions of some building devoid of meretricious ornament. It is not only buildings which can be beautiful, formulæ can be beautiful too; they can be beautiful in their suitability to their purpose.

With regard to the proposal to add the " hydrostatic pressure " to some agreed initial pressure, several points must be considered. St. Paul said, " No man liveth to himself alone," and I leave it to you as to whether a man may design his building on a certain assumption, taking into account " hydrostatic " pressure, and then have his neighbours around him excavating to a greater depth than his hydrostatic conditions permit. It is one of the desirable features of building legislation that a man shall be as free as possible from the consequences of his neighbour's excavations. Doubtless the members of this Institute will take due care that, in whatever proposals they have to put forward, they will put them in such a manner that a man's plans are not likely to be upset by the deeper plans of adjoining owners.

With regard to the question of what level you are to commence hydrostatic pressure, Dr Faber suggested he should go below the " weather level." The purpose of that formula itself was to get away from the vagaries of personal opinion. He wanted to remove an uncertainty, but it is possible that the uncertainty is not removed but is put into some other place. For example, " What is the weather level ?" It is one of the most debatable points imaginable. It is very hard to determine, and within the last two years I have known cases where there have been voids at a depth of 8 feet, 9 feet and 10 feet under the concrete foundations of buildings which have settled. Those voids were due to the loss of water content. I do not think Dr. Faber has in view any particular figure. But suppose a depth of 10 feet were taken as zero, that would probably meet all reasonable requirements of the case. In that method of design it would have to be decided what your initial pressure would be, and there again there is time and opportunity for discussion. I can understand district surveyors who are not prepared to take the full maximum pressures for foundations which are at or near the surface level. They may, for instance, say, " I will let you use four tons per square foot if you go deep enough, but as you are only taking away the top soil one or two tons per square foot is quite enough. Their judgment is lying in the same direction as Dr. Faber's more mathematical theory. They both endeavour to get sound results, and because both sides are anxious to find the truth they will approach nearer to it.

With regard to several foundations not within the County of London, I have seen houses built directly on a meadow without removing a blade of grass. I have also seen houses built directly on the refuse tip of collieries. Those cottages were sold, and within two years of the sale cracks appeared in the walls, which is, of course, only to be expected.

With regard to a common requirement that aggregate for concrete is to be gauged to pass a 2-inch sieve, I have seen, both in Luxemburg and in Germany, mass foundations of concrete which contained " plum stones " 8 inches in diameter ; and where the concrete is in sufficiently large masses and not reinforced I do not see any great disadvantage in the proposal.

With regard to an example of another type of foundation, a reinforced concrete bunker in the Midlands, the casing of the central pillars was burst off, and the binding broken, and some of the reinforcing rods were crumpled. The structure was designed on the assumption that all the pillars were loaded uniformly, without any attempt to take into account the relative deflection of the beams. But that was not the cause of the failure. The real cause lay in the fact that the compressive resistance of the subsoil was not uniform. Under the central portions the contractors had come across harder rock and had not reported the fact. The ends of the bunker, only resting on gravel, had settled down, and the central pillars were taking too much of the load. Therefore it is not only a question of change of uniformity on the top load which must be taken into account. The possibility of variations in the bearing power of the soil below must also be considered. It is an extreme case, because what the contractors found should have been reported to the architect. When spoken to about it the reply was, " I thought it did not matter ; it seemed as good as the rest to carry the load."

On another point, I have been at pains at various times to try and *ask the buildings* themselves what the correct foundation pressures should be. One may seek the results of experience as enshrined in books, but there is a more direct method. It is the appeal to laboratory methods and experiments. But no method can be so successful as *asking the building itself.* It may not be able to speak in words, but it is said that actions speak louder than words. In some of the cases which have been brought to my notice settlement has occurred in buildings carrying actual loads as follows—that is to say, the weight of the buildings and the contents :—

Sand, 2 tons per square foot.
Clay, $4\frac{1}{2}$ tons per square foot.
Alluvium, 1·7 tons per square foot.
Clay and sand mixed, 1·8 tons per square foot.

I admit that these are exceptional cases, and therefore should not be used as the basis for designs, but they are facts which should not be overlooked. The additional experiments and the formulæ advocated by the author to-night would give the additional information necessary to determine the reasons why the pressures were excessive in those particular cases.

Another point is, it is not so much uniform settlement of a building which matters. In this case, as in some others, the principle is one of relativity. It is a question of relative settlement between various parts.

If every part of a building settles one inch, no harm is done. If only one part settles one inch there may be ungainly cracks in the walls or in some of the plaster work. In designing a building so that these cracks will not take place one has to take great care in proportioning the loads. One desirable feature is that the centre of pressure from any pillar shall come as near as possible over the centre of the area of the foundation in question. With stanchions near the party walls where the foundations are different levels it sometimes causes a difficulty which it takes all the ingenuity of the architect to overcome.

Before I go on I must define one or two terms. I shall show you a method of designing foundations which has been tried in several instances, and I have known no failures. By " imposed weight " I shall mean " superimposed weight," or the " live load," as it is sometimes called. By " structural weight " I mean the " dead weight " of the materials only. This method, in regard to which I have not known any failures, is to take the pier or pillar in which the ratio of the " imposed weight " to the " structural weight " is a maximum. Secondly, determine the area of foundation by reference to the total permissible intensity of pressure on the bottoms. Next, determine the value of the structural weight per area on bottom. Then the area of your other foundations should be designed to carry structural weight only at the same intensity as given above. For example, take an " imposed weight " of 600 tons and a " structural weight " of 200 tons, or a total of 800 tons. In that case the imposed weight is three-fourths of the total. If the ground will take 4 tons per square foot, then the area required for the bottoms will be 200 square feet. In this case the rate of the structural weight to the area of the base will be 200 tons spread over 200 square feet, or 1 ton per square foot. If we have a stanchion carrying 500 tons imposed weight on a 200 tons structural weight, that foundation will be designed to carry a structural weight of only 200 tons at 1 ton per square foot. The foundation will be of the same area as before, but there will be the advantage that when the building was erected and unloaded the pressure on all the foundations would be uniform. When the building was fully loaded the first stanchion designed would carry the maximum pressure, and the others would be carrying less than the maximum. The advantage of the method may not appeal to those whose first consideration is the initial cost of the building, but it is one of the methods of keeping down the cost of maintenance. It also points out the desirability of keeping the ratio of imposed weight to structural weight as uniform as circumstances will permit.

Another point concerns the more frequent testing of foundations. In one case which came to notice recently the platform was loaded, and yielded to 8 tons per square foot, and it was proposed to use that foundation afterwards for a load of 4 tons per square foot, giving a safety factor of 2. Safety factors are dependent on the particular purpose, and the day of taking one uniform safety factor for everything is, I hope, gone for ever. (Hear, hear.)

There are many other points which I should have liked to take up, but there are many other speakers. I have rather scamped over some of the ground I have touched on ; I have taken certain points and made them discernable, but not so clearly as I should have liked. I must leave to other speakers what remains.

I thank you for your patience, and I hope I have not trespassed too much upon your time in doing what I am very pleased to do—that is, second the vote of thanks to Dr. Faber for his exceedingly informative Paper, which I am sure you will afterwards read with profit and perhaps, as it will certainly be in my case, with pleasure also.

Mr. EWART S. ANDREWS : I have very much pleasure in supporting this vote of thanks. I do so with particular pleasure, because I happen to have been working in a very similar field to that covered by Dr. Faber, and I have now watched for many years with great admiration, almost with envy, the very excellent work that he has been doing. I would like to draw the attention of the younger members to what is a very significant fact. Dr. Faber is a man of very high academic distinction. There are men who are so foolish as to imagine that because a man is of high academic distinction, therefore he is not of very sound practical judgment. I put it to you, sir, and to the meeting whether you cannot see, running right through this paper, evidences of very great practical skill on the part of Dr. Faber. I think that should be an encouragement to the younger men to pursue their studies into the theoretical side, because I am convinced that, provided a man has sound judgment—and without it he can do little—the addition of scientific and theoretical knowledge is of immense value to him.

Coming now to the details of this paper, Dr. Faber could not have chosen a more important subject to discuss with the Royal Institute of British Architects ; it is a subject which has been, I am afraid, very much neglected by the engineers. We have studied, in minute detail, the stresses in steel work and in reinforced concrete, and these fundamental subjects concerned with foundations have been allowed to lie very much in the background.

There are one or two points I would like to mention. One is that it seems to me that experimental evidence

proves that the pressure that you could safely put in a foundation does depend upon the size of the foundation. Dr. Faber has suggested that if the soil acts as a material with cohesion only, then the periphery is of vital importance. And I think the larger the foundation, the smaller should be your intensity of pressure. That point, I think, has been very fully brought out in one of the most gigantic failures of which we have record; and as I do not think all of you may have read of this case, I will briefly mention it. A full account will be found in the Proceedings of the American Society of Civil Engineers, 1916. It relates to the grain elevator at Winnipeg. It was on a reinforced concrete raft, and I am mentioning it because, although failures are always most regrettable, it is through failures that we learn most. That raft probably had nothing to do with the failure, but there were some remarkable results. The building, when loaded with 46,000 tons altogether, suddenly started tilting, and it went on tilting until the walls were at an angle of 26°, and then it stopped. One of the most amazing things about it is, that they succeeded in righting it, and the building finished up 14 feet above its intended level, and I think it is still functioning. But in that particular case they had been at some pains to try to ascertain the safe bearing load on the foundation, and they had made tests with the ordinary small loading cylinders, and found that four tons to the square foot should be a safe pressure. It gave way at a load of three tons per square foot. The building was founded on clay. There were 32 feet of blue clay, but beneath that there was some water-logged white clay, and under that there was limestone. Subsequent experience showed that by some accidental freak, on one side of the building there were boulders extending 12 feet above the level of the limestone, and that is the side which did not go down; the blue clay was squeezed into the white clay, and the white clay was compacted and all the water driven out of it.

My friend Mr. Etchells has spoken, and I was hoping he might have said something about the interesting results which Dr. Faber gave us as to the strength of modern concrete. Twelve tons to the square foot we are allowed under the London Building Act, and there is no intention of altering that, I think. But I would like to point out from the figure quoted by Dr. Faber that at 28 days we have 6,810 lb. to the square inch, which corresponds to 430 tons per square foot, and it does seem hard on us to have to design for a factor of safety of over 35.

Mr. GOWER PIMM, Assoc.M.Inst.C.E.: Notwithstanding Dr. Faber's expectation that his switching off the theoretical on to the practical would be welcomed with a sigh of relief, to me at all events, interesting as the examples of practical work were, even more fascinating was the earlier part of the paper—that dealing with theory.

Dr. Faber has reminded us that so far as soil can be regarded as a perfect fluid, there is only one depth at which we can place our foundations, and it is only by virtue of the degree to which our soil departs from a perfect fluid that we can depart from that depth. It is, perhaps, providential that in many cases there is this licence as compared with what would be required for the case of a perfect fluid.

I endorse heartily what Mr. Andrews said, not only with regard to Dr. Faber personally, but on the question generally of theory and practice. This is a subject which has been very much discussed, and it is time that they were brought more into harmony. Mr. Etchells once gave a delightful definition of theory. He said "Theory is meditation upon practice," and I do not think we can have anything better than that. I think Dr. Faber has left us with a great feeling of confidence after hearing his paper. He not only seems to get to know more about a subject than, perhaps, most people, but more important, he gets to know how to apply it, and he leaves us with the feeling that there is not much we cannot find out about a subject which is worth finding out, and that if we cannot find out as much as we should like to, we can at least apply what we do know rationally. I am reminded of an alarming statement made by an eminent engineer. The question which was being discussed was the transmission of bending moments from beams to columns. He had previously said that as no one could possibly ascertain what tension existed in a column, he personally made a practice, since concrete was a more economical material for sustaining compression than steel—he made a practice of constructing his columns in reinforced buildings in unreinforced concrete, merely putting in sufficient longitudinal steel to hold the binding in place. He was reminded that there was tension in columns, but his reply was that, as no one knew what the extent of it was, the only thing to do was to ignore it. I think a few minutes with Dr. Faber would cause him to have some sleepless nights.

In the later part of the paper Dr. Faber touches upon one thorny subject, and that is the relation of the architect to the engineer. I think the time is not very far distant when the relation between the architect and the constructional engineer will be a much more dignified one than it is at present. A very strong lead has recently been given by several Government Departments, who insist that the engineer when employed shall be employed in a more dignified way than he is at present. It is a subject upon which some of us feel strongly, and I think the conditions will shortly improve.

The only other point in the paper I want to mention is that concerning pile foundations. Perhaps I may be allowed to do so, as I have had rather favourable opportunities of investigating one point, and that is, skin friction and its value. I had an opportunity, years ago, of not only ascertaining what the value of skin friction was, but also to what extent it may be removed. This diagram shows it more clearly than I could convey in words. The firm lines are the records of driving three reinforced-concrete piles commencing at a depth of 25 feet below the surface, since above that depth driving was very free. Penetration is plotted vertically, and the number of blows delivered is plotted horizontally. Pile No. 1 was driven to a depth of 32 feet, when driving was stopped and resumed after a rest of four months. The development of skin friction during this period of rest is shown very clearly at point A. Dr. Faber said that after twenty blows (following a rest) nothing happens, and my curve No. 1 confirms this in a remarkable way; but when we get to about 40 blows we have reduced the pile to the same state, in regard to absence of resistance, that it was in when driving was stopped. In this particular case it so happened that rock was met almost as soon as driving had once more become free, and at point B we get a change in the condition from that produced by the elimination of temporary skin friction by repeated blows of the monkey to that due to contact with the rock. Skin friction will now again develop, and since contact of the toe with the rock will now prevent any considerable vibration, the skin friction will now be permanent, and is a very valuable asset; but in my own view it depends upon there being little or no vibration. The dotted line shows what would probably have been the driving record if there had been no considerable stoppage. Curve No. 2 is the record of a pile in the driving of which there were two short stoppages of a few hours only, and these points, although, as would be expected, they are very much less marked than the longer stoppage in No. 1, are nevertheless clearly shown. No. 3 is the record of a pile which was driven continuously and is shown for the purpose of comparison.

I think the presence of a stratum the bearing strength of which may be inadequate to carry the load coming on the pile, nevertheless, by limiting the vibration, enables the full effect of skin friction to be developed. I hope Dr. Faber will be able to tell us more about these points. It is, of course, possible to be too cautious. In one case a pile was being driven and it nearly reached a specified set. The resident engineer would not pass it at the time, but he told the contractor he might come and drive it again, but after a period of rest the pile refused to move.

I have very much pleasure in supporting the vote of thanks.

Mr. H. KEMPTON DYSON (Hon. Sec., Inst. of Struct. Engineers): I would like to tender my thanks to Dr. Faber for a very valuable and extremely interesting paper. I have myself been particularly interested in the summary of the theory. At this late hour I cannot go into matters so fully as I would wish; I shall only have time to refer to a few matters which I regard as of some importance.

First, Dr. Faber refers to cohesion, as it may be termed, in sands being due to the presence of moisture. The difference between one clay and another is, generally, not so much a matter of size of grain as of water content, and the effect of water seems to be more in the matter of giving cohesion, as the size of the particles decreases. That is why sand does not develop so much cohesion, if it is composed of coarse particles, when water is added, as does finely granulated clay.

I think it is a little inadvisable always to consider a very wet soil or a very sloppy clay as equivalent to a fluid as regards pressure and bearing power. If you agitate clay in suspension in water it will act just like fluid of greater density than water, equivalent to the weight of the suspended matter in the water. Yet I found when putting loose filling consisting of ashes upon mud, the mud after a while became consolidated, and the pressure of the mud upon the soil beneath was considerable. The weight of mud and sand, ballast or other filling, must be reduced when in water by the buoyancy of the material if the water can get into it. In constructing some foundations on the mud foreshore of a harbour during the war I could not get piles in time, as we were unable to get the quick-hardening

cement Dr. Faber refers to, so I made a spread foundation and calculated the resistance of the soil by taking account of the filling which would be on top of it, but reduced the weight of that filling by the buoyancy of the water. And those foundations were successful, though there was settlement when the load came on and by consolidation, and there was more settlement as one got further out into the harbour.

A detailed treatment of the problem of determining the effect of both friction and cohesion in granular materials was given in Appendix VII to a paper entitled " Shear, and Problems arising therefrom," read before the Concrete Institute in December 1914, and published in Volume VI, Part I, of the *Transactions* of that Society. The chief purpose of that demonstration at the time was to show the application to the shearing

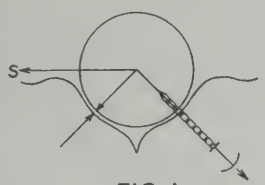

FIG. 1.

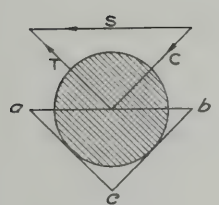

FIG. 2.

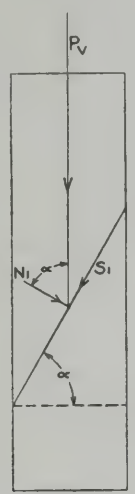

FIG. 3.

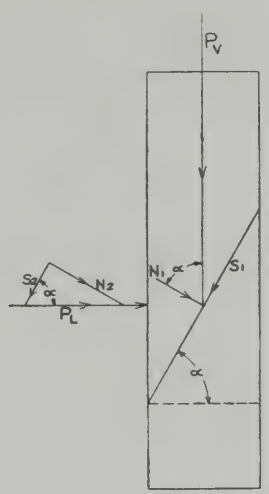

FIG. 4.

results that agreed closely with the test results recorded by the French Commission.

The cohesion given by the presence of water in fine sand has been referred to by Dr. Faber, and Mr. Bell gives an earlier reference to Mr. G. Wilson's experiments. The difference in cohesion between the particles with varying percentages is very noticeable by the difference in cohesion of the same clay under different degrees of wetness. The size of grain must also make a difference, so that sandy clay will differ from fine, smooth clay having the same water content, not only by reason of the difference in area of wetted surface, but also by reason of the friction between the particles differing in size and shape. The experiments indicate that the limits of variation in the coefficient of internal friction are comparatively small and, as it will

resistance and compressive strength of building stones, cement mortar and concrete. It will be evident that such theoretical treatment is most suitable for soils such as clay, which are granular in structure, differing distinctly from sand in that there is cohesion between the grains or particles. The paper by Mr. A. L. Bell that has been referred to, accompanied by a mathematical proof by Professor Maurice F. FitzGerald, appearing about the same time or soon after, attracted my attention, and I saw that the fundamental treatment that I had given afforded formulæ applicable to the problems of external pressure from clay and the bearing power of soils, which formulæ were of similar character to those given by Mr. Bell, and with suitable constants gave similar results. I also employed the same fundamental treatment to derive formulæ for the resistance of hooped reinforced concrete pillars which gave

be seen from the formulæ given later, do not so greatly affect the results as does the wide variation that there is in the cohesion. Whereas Rankine in treating of granular materials has a constant for the friction between the grains, Mr. Bell adds another constant for the shearing resistance. I, however, prefer to state the equations in terms of the cohesive force between the grains, because in my view that is the fundamental factor that determines not only the shearing resistance but the crushing resistance (hard clay can be sometimes like an inferior building stone), incidentally involving the height at which clay may be self-sustaining and the bearing power of foundations in clay. The cohesion is also comparatively easy to determine directly experimentally, for it is easy to pull a piece apart in a tensile machine.

In order to demonstrate the application of the

method to the present problem it is proposed to repeat some of the working given in the paper on "Shear" referred to above.

Firstly, a granular particle cohering to adjoining particles or embedded in a solid body may be considered to be situated somewhat as shown in Fig. 1, where it is shown under the shearing force S, tending to be pulled out of its surroundings, to which it is anchored (as it were) by the cohesion, and also held in position by the irregularity of surface which causes friction under the pressure that also results from the application of the same shearing force. First let the shearing force on the average grain be replaced by the tensile and compressive components at 45° (which are the equivalents of a shearing stress). Referring to bounding faces as shown, where *ac* is the average surface of friction and *bc* is the average face of cohesion, and taking the area of the face *ac* as unity, let t and c be the tensile and compressive components of the shear stress, r the cohesive resistance of the material and Φ the friction modulus.

Now $c=t=s$ and

$T=s$, $C=s$, $R=r$ and $F=\Phi\ C=\Phi s$.

We have for equilibrium $T=R+F$

$$\therefore \quad s=r+\Phi s$$

from which $s\ (1-\Phi)=r$,

and $$s=\frac{r}{1-\Phi}.$$

Now consider the combination of a normal and tangential stress as regards rupture by shearing. The effect of the normal stress will be to increase the resistance to sliding upon the plane of rupture by causing additional friction thereon.

Referring to Fig. 3. Let N_1 and S_1 be the normal and tangential forces, and let us treat them on similar lines to the foregoing.

Let A be the area of pressure.

Then $N_1=P_v \cos\alpha=p_v A\cos\alpha$

and $S_1=P_v \sin\alpha=p_v A\sin\alpha$.

The active shearing stress will evidently be reduced by ΦN_1.

As before $s=\frac{r}{1-\Phi}$, so that

$$s=s_1-\Phi n_1=\frac{r}{1-\Phi}$$

from which

$$r=(1-\Phi)(s_1-\Phi n_1) \quad . \quad . \quad (1)$$

By dividing the tangential and normal components by the area of the inclined plane $\frac{A}{\cos\alpha}$ we get

$$n_1=p_v\cos^2\alpha$$

$$s_1=p_v\sin\alpha\cos\alpha.$$

Inserting these values in equation (1) we have

$$r=(1-\Phi)\,p_v(\sin\alpha\cos\alpha-\Phi\cos^2\alpha)$$

from which

$$p_v=\frac{r}{(1-\Phi)(\sin\alpha\cos\alpha-\Phi\cos^2\alpha)} \quad . \quad . \quad (2)$$

It will be evident that the angle of rupture must be such as would cause failure under the least load, which by the foregoing formula is seen to depend upon the value of α. The minimum value is determined by differentiating p_v in respect to α and equating to zero, thus

$$\frac{dp_v}{d\alpha}=-\frac{r}{(1-\Phi)}\,\frac{(-\sin^2\alpha+\cos^2\alpha+2\Phi\sin\alpha\cos\alpha)}{(\sin\alpha\cos\alpha-\Phi\cos^2\alpha)^2}=0$$

from which

$$\sin^2\alpha-\cos^2\alpha=2\Phi\sin\alpha\cos\alpha,$$

and

$$\Phi=\frac{\sin^2\alpha-\cos^2\alpha}{2\sin\alpha\cos\alpha}=-\frac{\cos 2\alpha}{\sin 2\alpha}$$

$$=-\cot 2\alpha=\tan(2\alpha-90°).$$

But $\Phi=\tan\phi$, therefore

$$2\alpha-90°=\phi$$

or $$\alpha=\frac{90°+\phi}{2}=45°+\frac{\phi}{2} \quad . \quad . \quad . \quad . \quad . \quad (3)$$

Now insert the value of α in equation (2), obtaining

$$p_v=\frac{2r}{(1-\Phi)[\sin 2\alpha-\Phi(\cos 2\alpha+1)]}$$

$$=\frac{2r}{(1-\Phi)\left(\frac{1}{\sqrt{\cot^2\alpha+1}}-\frac{\Phi\cot 2\alpha}{\sqrt{\cot^2 2\alpha+1}}-\Phi\right)}$$

$$=\frac{2r}{(1-\Phi)(\sqrt{1+\Phi^2}-\Phi)} \quad . \quad . \quad . \quad . \quad (4)$$

In order to determine the height at which clay will be self-supporting we substitute $p_v=wh$, where w is the weight per foot cube of the clay and h is the height in feet, and choose suitable coefficients for r and Φ. The latter will be the same probably as for dry grains, say from ·3 to ·6, and for average cases we can take, say, ·4. The cohesive resistance will vary within much wider limits—from, say, 1 lb. per square inch for soft clay to, say, 50 lb. per square inch for hard clay, approximating to shale. With value of $\Phi=·4$ from equation (3) we should get $\alpha=56°$ as the angle of rupture.

Let us consider clay just on the point of sliding on the normal plane of rupture. If now we apply a lateral force of a certain amount, we can increase the vertical pressure to an extent.

Referring to Fig. 4 we have

N_1 and S_1 as before, and

$N_2 = P_L \sin \alpha = p_L A \tan \alpha \sin \alpha$

$S_2 = P_L \cos \alpha = p_L A \tan \alpha \cos \alpha$

N_1 is increased by N_2 and S_1 is reduced by S_2, so that the active shearing stress becomes

$$s = s_1 - s_2 - \Phi (n_1 + n_2)$$

As before $s = \dfrac{r}{1 - \Phi}$, so that

$$s = s_1 - s_2 - \Phi (n_1 + n_2) = \frac{r}{1 - \Phi}$$

from which

$$r = (1 - \Phi) [s_1 - s_2 - \Phi (n_1 + n_2)] \quad . \quad . \quad (5)$$

By dividing the tangential and normal components by the area of the inclined plan $A/\cos \alpha$ we get n_1 and s_1 as before, and

$$n_2 = p_L \sin^2 \alpha$$

$$s_2 = p_L \sin \alpha \cos \alpha$$

Inserting these values in (5), we have

$$r = (1 - \Phi) [(p_v - p_L) \sin \alpha \cos \alpha - \Phi (p_v \cos^2 \alpha + p_L \sin^2 \alpha)]$$

from which we derive

$$p_v (\sin \alpha \cos \alpha - \Phi \cos^2 \alpha) = -p_L (\sin \alpha \cos \alpha + \Phi - \Phi \cos^2 \alpha) - \frac{r}{1 - \Phi}$$

and $$p_v = -p_L - \frac{p_L \Phi + \dfrac{r}{1 - \Phi}}{\sin \alpha \cos \alpha - \Phi \cos^2 \alpha}$$

Differentiating p_v in respect to α and equating to zero as before we get the same results, since p_L is constant, which means that the angle of rupture is constant, so that we can use the previous working to arrive at a formula simply.

Substituting the same as was done to get equation (4) we have

$$p_L (\Phi + \sqrt{1 - \Phi^2}) = p_v (\sqrt{1 + \Phi^2} - \Phi) - \frac{2r}{1 - \Phi}$$

and $$p_L = p_v - \frac{2r}{1 - \Phi} \quad . \quad . \quad . \quad . \quad . \quad . \quad (6)$$

Substituting for p_v the value wh to determine the pressure against a retaining wall we have

$$p_L = wh - \frac{2r}{1 - \Phi}$$

Proceeding as Rankine, Mr. Bell and Dr. Faber have done to arrive at a formula for carrying capacity,

$$p_v = wh + \frac{4r}{1 - \Phi}$$

which compares closely with that of

$$p = wh + 4k$$

given in Dr. Faber's paper for the case where friction is taken as negligible. It will be seen that instead of one constant the new formula has two, thus taking account of both the friction and the cohesion. Seeing that Mr. Bell takes into account the shearing value of the clay which depends upon cohesion and friction, his one constant k includes my two constants and therefore our analyses are shown to be of the same character.

As regards testing a soil for its bearing capacity, I have tested a number of different kinds of soil, and one of the most interesting was the clay under the foundations of St. Paul's Cathedral. I had heard stories about the clay being pot-earth, or a brick clay, and that it was very dry and hard. But at last I persuaded the authorities to have the Crypt floor pulled up and an excavation made by the side of one of the piers carrying the dome. I found that the clay was just an ordinary sort of brick earth, fairly plastic, so that one could mould it in one's fingers well. I took 6 inch and 12 inch square blocks of timber and put them on the ground with a hydraulic jack on the top having a pressure dial, with girders overlaid across the excavation and loaded with pigs of lead, so that I could push up against them. Thus pressure was put on those blocks of wood up to somewhere about twenty tons per square foot on the clay. I found with a pressure of about four to six tons per square foot that there was very little movement, but the movement increased with increasing pressure and eventually with twenty tons to the square foot I got over an inch of movement. The reason why the Building Acts limit the pressure on soils is to prevent much movement in the structure above and the cracking of parts. At the time these pressures were selected the foundations were not proportioned in area to the loads they had to sustain in different parts of a building, so that if one portion were stressed higher than another so highly as to move farther than the other, cracks appeared, which were unsightly, to say the least. It is difficult to estimate the exact pressure there is on the ground under St. Paul's foundations. The load is supplied eccentrically on the piers, and there is a greater stress on one edge compared with that on the other. I think the pressure varies as a maximum from six tons to ten tons per square foot, but I could not find any sign of any movement in the foundations after the building had been built. Probably it moved in the first year as surface water was drying out, but afterwards I do not think it moved at all. I found that after I had removed these blocks of wood which I had squeezed into the clay, that the clay underneath had had nearly all its water squeezed out of it immediately under the point of

application of the load. That phenomenon has been noticed in putting pressure on to wet sand. The pressure squeezes the water out of the clay or sand and compacts the sand or clay, which is largely the reason for vertical movements.

Coming to the question of rafts, Dr. Faber referred to a sort of lip on the sides of a raft to retain the earth and prevent its escaping laterally. There were some interesting machine foundations built in an early Paris Exhibition by that eminent pioneer, Cottançan, who made a reversed box foundation, as it were, by digging trenches in the ground and filled in and over the top with reinforced concrete. The dumpling left in added to the total weight of the foundation and helped to resist vibration of the engines placed on top. At a later date Considère invented a good type of foundation for very weak soils consisting of a hollow cone resting on the ground like an inverted funnel.

With the aid of reinforced concrete to-day we can effect tremendous economies both in time and in cost of material and labour in the foundations of modern heavy buildings. I do not think it is quite realised by the architectural profession what an amount of time and cost can be saved by the exercise of structural engineering skill.

Talking further of rafts and Dr. Faber's remark about the raft in one case, that at Marlborough College, forming the ground floor, I have carried out a raft under a reinforced concrete building the like of which I do not think there is another in this country. Those present may be familiar with so-called " mushroom " floors of reinforced concrete used in America, in which there are no beams to show underneath. I designed a raft at Limehouse where I have used what might be termed a " mushroom " floor upside down. But I put the splays round the pillars down into the ground ; that is I made hollows in the ground like reversed pyramids and filled concrete and reinforcements into them. Working out that system of construction versus the ordinary beams, I found it much cheaper.

I think Dr. Faber's treatment of the resistance of a pile by calculating chiefly the cohesion or skin friction is the most sensible thing that can be done. Ordinary pile formulæ found in the text books are worse than useless, because they do not represent the facts at all.

I am sure we thank Dr. Faber very much for his most interesting paper.

Mr. PERCY J. WALDRAM [*Licentiate*] : I would just like briefly to ask this question : Is the six to one concrete, six of concrete plus two of sand ? Or is it four of concrete plus two of sand ?

Mr. J. S. WILSON : As a visitor, I should like to answer one point. In that formula which has been admired by Mr. Etchells, perhaps more than it deserves, I asked Dr. Faber why he uses the constant. It is 4 k which, according to the legend on the slide, was th shearing stress per square foot. In the other term h has wh, which introduces depth. I wondered why it di not appear in the second term as well as in the fir term. I think Dr. Faber intended it to be the ration expression, but apparently it is not.

Mr. F. M. P. HIGGINS : Will Dr. Faber tell u about the piles which he made of quick-setting cement Is it of a well-known brand the name of which I wi not mention in which he had failures, especiall splaying of the heads of the piles ?

The CHAIRMAN (Mr. Dawber) : We have had most interesting paper and a good discussion to-nigh and I am sure Dr. Faber will like to answer the ques tions which have been put.

As architects, we were extremely interested in th diagrams he showed us of the actual work done in th Custom House at Shanghai and the buildings at Mar borough College by Messrs. Newton. We have a had troubles with our foundations, and for my part am very glad to know we have such a rock to rely upo as Dr. Faber when we get into trouble in futur I was particularly interested in that diagram whic he showed illustrating the failure of the building Harrow ; but, so far as I gather, they were vertic settlements, and I would ask what he would have don if the building broke its back in the middle and com menced to slide downhill.

I have very great pleasure in putting to you the vo of thanks which was proposed by Mr. Searles-Woo and seconded by Mr. Etchells.

The resolution was carried by acclamation.

Dr. FABER (replying on the discussion) : I want t thank you very much, gentlemen, for the very gre patience you have shown ; I think you are the mo long-suffering people I have ever met.

As it is now so late, I will be as brief as I possibly ca Mr. Searles-Wood asked about the allowance for vibra tion at Mansion House station owing to the railwa Most of our foundations were built on top of the co crete invert or raft existing under the lines over th whole site. This raft overlies good blue clay found tion. Our stresses are considerably less than the fo tons usually placed on blue clay, but I cannot sa exactly how much the allowance for vibration is.

Mr. Etchells, in his very interesting remarks, men tioned that he thought I had blamed Rankine too muc Well, I do think Rankine is rather to blame, because h deliberately said that his formulæ could be used, an should be used with ordinary soils, because, though h recognised the existence of cohesion in ordinary soil he thought this cohesion was liable to be lost : whe only that portion which depended on friction woul remain. If you follow the Rankine formulæ to the logical conclusion you get, on the one hand, the gre

rrying capacities shown on Table II, which are not iide the experience of any known man; and, on e other hand, you get the result that the foundation the surface will carry no stress at all, which also is t within the experience of anybody. Therefore, it clear, those formulæ do not fit practical soils. Many uses have been built (at Tilbury, I believe, about 800 uses) resting on a concrete raft which is directly on e grass, where the raft forms the ground floor, and it has been a success. According to Rankine this impossible, showing that his formulæ cannot be plied to ordinary soils.

I agree with Mr. Etchells that tests on buildings are ry useful, interesting, and important; but unless you ike a test of the soil under a particular building you ve no means of correlating that particular piece of perience to other buildings. If we make out a list buildings and say " This particular building was on id and it stood three tons to the square foot, and this ier building was on clay and stood four tons " we can ly use this information to a very limited extent, cause the clay in one place is very different from the y in another. If, however, we can test the shear ength and friction angle of a particular soil which is en found to carry certain loads with safety, then our perience can be related to other cases, which greatly creases its value. I am sure Mr. Etchells would be e first to agree with me on this.

Mr. Andrews, after his exceptionally kind remarks iich I feel unable to deal with, touched particularly the size of foundations and its effect on safe pres-res. This question is very important, and I do not nk we know all there is to be known about it. It is rtain that under certain conditions a small foundation ll carry a much greater stress than will a big one, and ose conditions particularly include the case where ere is a hard layer above, with a soft layer below. If u imagine 10 feet of stiff material imposed over feet of less stiff material, and you load 1 square foot the stiff material on top, you have 10 feet of stiff terial to spread the load before it stresses the soft terial. Taking an angle of dispersion of 45°, it has obably spread over 20 feet in each direction, that is, o square feet; and that pressure on the soft material utterly negligible. But if you have a raft 200 feet uare on top, and take an angle of dispersion of 45° m the edge of that, you find that the increased a of the lower level on the subsoil is a much smaller centage increase on the area at the top level; and n the carrying capacity may be determined by the ess on the soft soil at the bottom. In that way, the ect of the size of the foundation on the safe pressure it depends on whether or not there are soft layers derlying hard layers.

The way we mostly test our foundations is ridiculous. e let the foreman dig a hole, we look into it, and he hits it with a bar, and it goes in 3 inches, and he says " That's all right," or " It is not right." What happens more than three inches below the surface no one enquires; it may be that 3 feet below there is a layer of soft mud. When we spend, as we do, huge sums on buildings, it is ridiculous to take such little trouble about foundations.

Mr. Pimm gave some very interesting facts and figures about the skin friction on piles, and I would ask that the diagram he exhibited and explained may be published; I am sure it is a very interesting diagram, and would be very useful. But I think he overstated the risk of relying on this cohesion or skin friction. Unless in exceptional circumstances, as where large steam hammers are at work, you are not likely to get a vibration which is very terrible. Mr. Pimm showed that it took about forty blows to break down the cohesion. The blows used in pile driving are generally of the order of three tons dropping three to four feet. In ordinary buildings we do not get vibrations of that magnitude, and my view is that, except in very unusual circumstances, skin friction is a very proper thing to rely upon.

Mr. Dyson, in the course of the many interesting things he said, most of which I agree with, mentioned that the cohesion in clay may be somewhat akin to the surface tension which I referred to as sometimes beginning to exist in sand, though in sand it is only tiny. I am inclined to think he is right, but I do not think it matters, as far as my formulæ are concerned. I simply say—measure the cohesion, and when you have done so you can put it into the formula, and you will then be able to know what the proper bearing capacity of that soil is under various conditions. He also mentioned the use of mushroom rafts, stating that they are cheaper than rafts constructed of slabs with deep stiffening beams, and I agree as to that. But I do not think they are so good, because a mushroom raft will only distribute the load of a particular stanchion on to the area of soil immediately surrounding it. A reinforced concrete raft with stiff beams serves other useful purposes as well. In the case of the Custom House at Shanghai I carefully considered mushroom rafts, but I dismissed them, though they would have been cheaper, for the following reasons. There is, in buildings of that kind, a variation in the resistance of the subsoil which you cannot avoid, and variations in the incidence of the loading of the building; and, however careful you are, you cannot be sure that the load on one part will agree exactly with the resistance of the foundation under it. A certain cargo may come in and be stacked on one side, and practically nothing on the other. On yielding soils like that in Shanghai trouble will arise unless the raft, like a ship in a heavy sea, is strong enough to transmit part of the load from the heavily loaded area to the lightly loaded ones, in other

words, to make the whole raft act as a stiff structure and go together whatever the incidence of load may be. This a mushroom raft is ill adapted to do.

In reply to another question, the 6 to 1 concrete was 4 parts of $\frac{3}{4}$ inch crushed ballast, 2 parts sand, 1 part cement.

I cannot agree that the formula $wh+4k$ is not rational or that it should be an h attached to the k. The first part of that formula represents the hydrostatic pressure due to the depth at which the foundation exists ; and the second part of the formula gives the safe pressure which can be exerted on soil, in virtue of its shearing resistance, which depends on the cohesion. It is a rational formula in every way.

The piles of quick-setting cement were made of a well-known make. We had no trouble with them, except that we hammered the piles so hard that we broke some of their heads. We had made the piles longer than we wanted them, and we continued to hit them until the heads broke, so as to get the full benefit from them. Any pile would have smashed under the treatment these received ; we were going to get all the penetration and all the resistance possible out of them.

With regard to the Harrow Music School and vertical settlement, and what we should have done if it had not only been vertical settlement but there had been a movement downhill, that is exactly what did happen. The settlements were not only vertical but also lateral ; there were large cracks extending up the walls, showing that some portions had slipped horizontally, and the concrete raft served not only to prevent the vertical settlement but to tie the vertical piers laterally, so that in future they will all have to go together.

The following contribution to the discussion has been received from Mr. PERCY J. WALDRAM [*Licentiate*] : " The popular idea of the relative qualifications of the architect and the engineer with regard to structural matters is fallacious and wholly unfair to the architect. He is supposed to have his head always in the clouds, whereas the engineer is believed to be the embodiment of hard-headed common sense with all the developments of science at his command. The reverse is often the case, and I would venture to submit the heretical proposition that in structural matters the judgment of the experienced architect, tempered as it is by constant daily and often hourly necessity of making structural decisions of all kinds, is often to be preferred to that of the engineer, especially the young modern engineer, who is often far too apt to rely upon what he has read or been taught at college, or, when he does think for himself, is often caught in the tangle of his own mathematics and is unable to see the wood for the trees. Too much algebra, like too much drawing, is an overrich diet upon which to keep structurally fit.

For this reason we want more engineers like Faber, who is not afraid to think for himself and refu to be bound by ' authority,' however orthodox.

But even more do we need architects who will t an intelligent and lively interest in structural matt

There is far too much pseudo-science in our mod text-books and technical journals, often hidden wit a maze of mathematical symbols. It would indeed well if architects took more frequent occasion to ap the acid test of structural common sense to what is before them.

There is, as Dr. Faber has shown us, very little d culty in extracting a few typical examples of the res given by any formula, however complicated, a ascertaining whether such results agree or disagree v our everyday experience. There is no need to frightened by mathematical symbols, which all h simple physical meanings, nor to become entangle algebraical deductions : the result is the thing, a architects can judge that as well as anybody.

What Dr. Faber has done in applying the *result* Rankine's formulæ to physical happenings in pract work architects can do with every formula, old a new, which they are advised to adopt. They may be able to evolve new and better rules and formu and it is to be hoped they will not try to. We bound by too many rules and formulæ already. too many worthy enthusiasts are urging us to ad their particular form of structural salvation.

The extent to which the developments of mod science enable the engineer to produce formulæ certain and unquestionable reliability is much ov rated. Do we not see Dr. Faber asking us to substit his formulæ for Rankine's, and complaining of the different rules for piles ? Pile formulæ did not trou the builders of the oak frame houses which remain our delight after, not 20 or 100 years, but after m centuries.

Subsequent speakers also did not, as engineers, se to be wholly in agreement with Dr. Faber. Th attacks were, of course, disarmed by well-earned eulo but still they attacked when necessary. All this is the good. Originality of thought is always welco *Quot homines, tot sententiae*. But when the doct disagree there is only the architect to stand between patient client and disaster.

Undisturbed and unimpressed by the clashing rival mathematical symbols, he alone must make structural decisions, for which his client and poste will hold *him* responsible, and not the expert whom has engaged.

Let the architectural schools see to it that the com generation of young architects are turned out wit proper grounding in structural common sense, w that first-hand knowledge of materials and forces wh can only be learned from practical tests—from mod

roof trusses loaded to destruction, from the breaking beams and not merely sticks, from test holes dug l tested with the students' own hands.

Let that spirit be engendered which in my own perience caused an elderly district surveyor to spend o evenings a week at the Westminster Technical stitute during a whole winter, mixing and shovelling ncrete into the forms of reinforced concrete test ams and pillars, and subsequently watching the test ults with all the keenness of the young students und him. No serious outlay is involved. My dents at Westminster made all their own test plant—werful enough to break a floor panel, yet sufficiently licate to read deflections to a fraction of a millimetre. hour on the testing machine is worth a week of ebra.

When Westminster Hall roof was built there was no tegral Calculus, no algebra, and certainly no stress grams or slide rules. If there had been, probably one would have dared to build it. Possibly also re were no tee squares or french curves. Only dels. *Verb. sap.*

Obituary

SIR RYLAND ADKINS, K.C., D.L.

The range of Ryland Adkins's interests seemed to have limit. He could at a moment's notice speak with ease on almost any subject; and if what he said about atters which he had not closely studied was not pro-und, it was at least stimulating and interesting. He as one of the best after-dinner speakers of his time, ways ready with some apt phrase, some humourous ecdote, or some flash of wit. One of his charms was at his wit was original, produced by the circumstances the moment. To talk with him was always a stimulant; e Falstaff, he was not only witty in himself, but the use of wit in others.

Among the many subjects of which he made a study as architecture, more especially in its domestic manifes-tions. He knew many large houses and their gardens, d being full of historical learning, nothing delighted m more than to fit these places into history, to relate em to the men and manners of their period. He was ofoundly versed in the history of his native county of rthamptonshire, and the growth and development of civilisation. He had sound theories of why roads ran is way or that, why villages stood where they did, why e churches were built in their particular positions, and ny the manor houses were near the churches or at some stance from them. With the details of architecture he as less concerned, but sought information with ingenuous nplicity.

His interests were so widespread that the number tending his funeral was unprecedented in the county. epresentatives of every phase of county government d of politics, art and literature, from all over the untry were present. Of most of the high offices he held it may be said that no adequate successor will be found. To him, more than to most, are applicable the well-known words "Take him for all in all, we shall not look upon his like again."

J. A. G.

ST. PAUL'S CATHEDRAL.

In response to an invitation from the Dean of St. Paul's, the Council of the Royal Institute of British Architects have nominated Mr. William Dunn, F.R.I.B.A., late Consulting Engineer in Reinforced Concrete to H.M. Office of Works, to represent the Royal Institute upon the Committee now being formed by the Dean and Chapter of St. Paul's in connection with the administration of the funds recently subscribed by the public for the preservation of the Cathedral.

Mr. Dunn was in Italy on his way to East Africa, but has consented by telegram to return to London immediately for the sole purpose of serving on the above Committee—a public-spirited action which will be appreciated by all who are aware of the exceptional qualifications which Mr. Dunn possesses for this appointment.

THE NATIONAL PHYSICAL LABORATORY.

The Superintendent of the National Physical Laboratory writes to say that a considerable number of applications have been received at the Laboratory from architects engaged on hospitals for copies of the X-ray and Radium Protection Committee's Report which deals, among other things, with the protection arrangements necessary for X-ray departments. Copies of these recommendations can be had free of charge on application to the Director of the National Physical Laboratory, Teddington, Middlesex.

THE TRIPLE SCREEN AT HYDE PARK CORNER.

8, *Montague Road,*
Richmond Hill, Surrey.
29 *January* 1925.

To the Editor, JOURNAL R.I.B.A.

DEAR SIR,—An article on the work of John Henning and his sons appeared in *The Art Journal* for April 1849. In it is contained the answer to Mr. Cyril Brett's question.* After referring to some work carried out by the sculptor, assisted by his sons, it continues "Other works in relief were executed by the same united hands, among which we may mention the friezes on Hyde Park gate, of which John Henning, junr. furnished the designs." The article is unsigned, but states that it is founded on a MS. autobiography, and having been published so soon after the execution of the work and during the lifetime of John Henning, senr., may, I think, be considered a trustworthy authority for the ascription of the design to his son John, and of the actual carving to the father and both sons; the joint execution may account for the conflicting statements referred to in Mr. Brett's letter.—Yours faithfully, J. STANDEN ADKINS.

* See JOURNAL, 10 January, p. 159.

Legal

HIGH COURT OF JUSTICE.

Chancery Division.

THE USE OF THE LETTERS A.R.I.B.A.

Royal Institute of British Architects *v.* Hindle.
(*Before* Mr. Justice Tomlin.)

This motion was brought by the Royal Institute of British Architects for an interim injunction to restrain the defendant, J. W. Hindle, from using the description or letters A.R.I.B.A., or from otherwise representing that he was connected with or vouched for by the plaintiff Institute.

Mr. F. Whinney appeared for the plaintiff Institute ; the defendant did not appear.

Mr. Whinney said that in this case the defendant had been representing that he had passed the examination of Associate of the Royal Institute of British Architects, and had added the letters A.R.I.B.A. after his name.

By so doing he had obtained a contract of employment by Mr. Halstead Best, at a salary of six guineas a week for five years, who had taken him into his employment in the belief that he was a member of the plaintiff Institute. Owing to the manner in which he did his work, the employer became doubtful whether he could be a member of the Institute, and ultimately he discovered that he was not. It was not the first time that the defendant had attempted to pass himself off as an Associate, and, in the circumstances, the Institute asked for an injunction.

Mr. Justice Tomlin granted the injunction.

Solicitors : Messrs. Markby, Stewart, and Wadesons.

ARCHITECTS' BENEVOLENT SOCIETY.

Scheme of Insurance.

In view of the interest shown by architects in the Scheme of Insurance, the Council of the Architects' Benevolent Society have recently secured the help of an advisory committee of insurance specialists.

The Architects' Benevolent Society is now in a position to answer enquiries on every class of insurance business, whether concerning existing or contemplated policies, and is ready to give considered advice on all such questions.

THE ART LOVERS' LEAGUE.

A new association has been started under this title with the objects of uniting " artists and the public in the support of a sane, healthy and progressive art and to discourage the interested exploitation of degenerate, reactionary and incompetent work." In a preliminary prospectus, issued by the League, it is stated that " owing to the organised propaganda of extremists, successfully promulgated through the absence of systematic opposition, sound and well understood standards of criticism have been largely abrogated in favour of arbitrary and illogical dogmas." The League proposes by various means to combat this state of affairs in all directions in which its influence operates adversely against the interests of sane and competent work.

NOTES FROM THE MINUTES OF THE COUNC MEETING.

19 *January* 1925.

Officials and Public Work.

On the recommendation of the Practice Stand Committee, it was decided to bring forward a resolut at a General Meeting to the effect that all public buildi paid for out of the rates or other public funds should technically and architecturally worthy of the locality. achieve this end the design of such buildings should either the subject of competition or entrusted to a qu fied architect without competition ; further, that if s resolution is approved by the General Body of Membe it should be forwarded to the appropriate authorities.

Housing Competitions : Model Conditions.

The Council approved an amendment to Clause 4 these Conditions so as to provide for the remuneration the successful competitor being in accordance with proposed Scale of Fees for Housing Work.

Zoning of Built-up Areas.

The Council approved a report on the subject of Zoning of Built-up Areas drawn up by the Town Pl ning Committee and ordered it to be submitted to London County Council in response to a request fr that body for the views of the R.I.B.A. on the subject

Reform of the London Building Acts.

On the recommendation of the London Building A Committee, it was decided to submit the Committe report on the Reform of the London Building Acts to London County Council.

Albert Bridge, Old Windsor.

On the recommendation of the Art Standing Co mittee, it was decided to enquire from the Ministry Transport whether this design had been brought to th notice, and to suggest that, in view of the expenditu of public money involved, the Minister of Transp should urge the Local Authority concerned to seek advice of the Royal Fine Art Commission.

Report of the Special Committee on Housing Fees.

The draft of the revised Scale of Fees for Housing W was approved and ordered to be submitted to the Gene Body at an early date.

The Allied Societies.

(A) Sanction was given to an alteration in the consti tion of the Manchester Society of Architects to ena the Burnley Society of Architects to be admitted alliance with the Manchester Society.

(B) An alteration of the boundaries of the Liverp Architectural Society and the Birmingham Architectu Association was sanctioned to enable a Branch of Liverpool Architectural Society to be formed at Chest

Prizes and Studentships.

The Award of Prizes and Studentships for 1925 v approved and sealed.

St. Paul's Cathedral.

A donation of 100 guineas was voted in aid of the Paul's Cathedral Preservation Fund.

Model Specification of Water Pipes and Fittings.

On the recommendation of the Science Standing Committee, the Model Specification of Water Pipes and Fittings prepared by a Committee appointed by the Minister of Health was approved, and the following additional paragraph was suggested for the consideration of the Minister of Health :—

V. " Every overflow should be easily accessible for cleaning purposes."

The University of Bristol.

Mr. Mowbray A. Green was appointed as a member of the Court of the University of Bristol.

The National Association of Water-Users.

Mr. P. M. Fraser and Mr. Alan E. Munby were appointed as representatives of the R.I.B.A. upon the Council of the National Association of Water-Users.

The National Register of Electrical Installation Contractors.

Mr. Max Clarke and Mr. Alan E. Munby were reappointed as the representatives of the R.I.B.A. upon the Registration Board of the National Register of Electrical Installation Contractors.

British Engineering Standards Association.

Mr. C. A. Daubney and Mr. P. M. Fraser were appointed to represent the R.I.B.A. at a Conference to be held at the Institution of Civil Engineers, Great George Street, Westminster, S.W.1, on Wednesday, 28 January.

Reinstatement.

Mr. H. W. Mole and Mr. Percy J. Groom were reinstated as Associates.

Resignation.

The resignation of Mr. G. F. Byron (*Licentiate*) was accepted with regret.

BOARD OF ARCHITECTURAL EDUCATION.

Exhibition of Architects' Working Drawings.

An Exhibition of Architects' Working Drawings will be held in the R.I.B.A. Galleries from Wednesday, 18 February 1925, to Saturday, 7 March 1925.

The Exhibition will be open daily between the hours of 10 a.m. and 8 p.m. (Saturdays 5 p.m.), and will include drawings kindly lent by :—Sir Edwin L. Lutyens, R.A. [*F.*], (Britannic House) ; Sir John J. Burnet, A.R.A., R.S.A. [*F.*], (Adelaide House) ; Messrs. Helmle and Corbett (Bush House) and Mr. H. S. Goodhart-Rendel [*F.*].

The Exhibition is intended primarily for students of architecture ; they will be able to examine the drawings that a practising architect hands to a contractor, and thus will be afforded an insight into the methods adopted in a modern architect's office.

A Special Students' Evening will be held at the Exhibition on Wednesday, 18 February 1925, at 8 p.m. All students are cordially invited to attend. It is hoped that the architects who have lent the exhibits—or their representatives—will be present in order to explain the drawings to students. Refreshments will be provided, and no cards of admission are required.

R.I.B.A. EXAMINATIONS.

The following are the dates for the R.I.B.A. examinations in 1925 :—

Intermediate Examination.—22, 23, 25, 26 and 28 May. (Last day for receiving applications, 24 April.) 20, 21, 23, 24 and 26 November. (Last day for receiving applications, 17 October.)

Final and Special Examinations.—8, 9, 10, 11, 13, 14 and 16 July. (Last day for receiving applications, 8 May.) 2, 3, 4, 5, 7, 8, and 10 December. (Last day for receiving applications, 30 October.)

Examination for the R.I.B.A. Diploma in Town Planning —1, 2, 3, and 6 July. (Last day for receiving applications, 1 March.)

Notices

SPECIAL GENERAL MEETING.

A special general meeting will be held on Monday, 16 February 1925, at 8 p.m. for the following purposes :—

1. To read the minutes of the special general meeting held on 7 July 1924, and formally to admit members attending for the first time since their election.

2. To consider, and, if thought fit, approve the following resolution, which is submitted to the general body of members by the Council on the recommendation of the Practice Standing Committee :—

" That all public buildings paid for out of the rates or other public funds should be technically and architecturally worthy of the locality. To achieve this end, the design of such buildings should either be the subject of competition or entrusted to a qualified architect ; and further, that this resolution, if approved, be forwarded to the appropriate authorities."

3. To consider, and, if thought fit, approve a scale of architects' charges for housing work prepared by a special committee, and approved by the Council with a view to the incorporation of such scale in the R.I.B.A. scale of professional charges in the place of the existing Clause 9 ; and in connection therewith, to consider, and, if thought fit, approve the following resolution :—

" With the object of assisting in the solution of the national housing problem, and having in view the necessity for the employment of qualified architects on housing work, the members of the Royal Institute of British Architects assembled in general meeting, resolve to modify their charges in connection with housing schemes for local authorities and public utility societies, and agree to accept a reduced scale of charges for such work.

And further, that this resolution, if approved, be transmitted to the Ministry of Health and local authorities together with a copy of the scale."

A copy of the draft scale of architects' charges for housing work is enclosed with this issue of the Journal.

4. The Council will propose that the new Bye-Law 29 be amended by the addition of the following words :—

"(*g*) The Chairman of the Board of Architectural Education, being a Fellow of the Royal Institute," at the end of paragraph (*f*) in the new Bye-Law.

VISIT TO THE SIR JOHN SOANE MUSEUM.

A visit has been arranged by the Art Standing Committee to take place on Saturday, 28 February, to the Sir John Soane Museum. As the number attending must be limited, members desirous of taking part are requested to make early application to the Secretary R.I.B.A., 9, Conduit Street, London, W.1.

ELECTION OF MEMBERS, 8 JUNE 1925.

Associates who are eligible and desirous of transferring to the Fellowship Class, are reminded that if they wish to take advantage of the election to take place on 8 June 1925, they should send the necessary nomination forms to the Secretary R.I.B.A. not later than Saturday, 21 March.

BUSINESS MEETING, 2 MARCH 1925

An election of members will take place at the Business General Meeting on 2 March 1925. The names and addresses of the candidates (with the names of their proposers) found by the Council to be eligible and qualified for membership according to the Charter and Bye-laws, and recommended by them for election, are as follows :—

AS FELLOWS (6).

BARKER : RAYMOND TURNER [*A.* 1899], 11 Buckingham Street, Strand, W.C. ; New Place, Welwyn, Herts. Proposed by Wykeham Chancellor, Sydney W. Cranfield, T. F. W. Grant.

BESWICK : WILLIAM [*A.* 1911], 19 Newgate Street, Chester ; 17 Eaton Road, Chester. Proposed by Maxwell Ayrton, Sir John W. Simpson, William J. Walford.

DANNATT : PERCY BOOTHROYD, F.S.I. [*A.* 1903], 18 Nelson Street, Greenwich, S.E.10 ; 47 Westcombe Park Road, Blackheath, S.E.3. Proposed by Alfred Roberts, W. R. Davidge, W. H. Ansell.

PARKIN : WILLIAM GORDON [*A.* 1918], Consular Road, Tientsin, China ; 125, Meadows Road, Tientsin, China. Proposed by Herbert Baker and the Council.

SLATER : JOHN ALAN, M.A.Cantab. [*A.* 1911], 46 Berners Street, W.1 ; 8 Wellgarth Road, N.W.11. Proposed by A. H. Moberly, Maurice E. Webb, F. C. Eden.

WILSON : JOHN GODDARD [*A.* 1923], Public Works Department, Union Buildings, Pretoria, South Africa. Proposed by Ernest M. Powers, J. Lockwood Hall, Sir Aston Webb.

AS ASSOCIATES (15).

BARNSLEY : GEOFFREY REYNOLDS [*Final Examination*], 3 Paper Buildings, Temple, E.C.4. Proposed by A. Dunbar Smith, Sir John W. Simpson, Maxwell Ayrton.

BEST : MAJOR HALSTEAD, R.E. (ret.), F.S.I. [*Special Examination*], St. John's Chambers, Church Street, Blackpool. Proposed by Arthur Ashton and the Council.

CUMMINGS : CLIFFORD LANE [*Special War Examination*], St Leonard's Avenue, St. Kilda, Melbourne, Australia Proposed by the Council.

ELIJAH : SAMSON ABRAHAM [*Final Examination*], c/o Messrs Thos. Cook & Son, Hornby Road, Bombay, India Proposed by Charles E. Varndell, Geoffry Lucas Robert Atkinson.

ENTHOVEN : RODERICK EUSTACE [*Passed five years' course a Architectural Association—Exempted from Final Examina tion after passing Examination in Professional Practice* 3 Cleveland Gardens, Lancaster Gate, W.2. Propose by H. S. Goodhart-Rendel, Robert Atkinson, F.A Richards.

FAIRHURST : PHILIP GARLAND [*Passed five years' course a Manchester University School of Architecture—Exempte from Final Examination after passing Examination in Pro fessional Practice*], Ellesmere, Macclesfield Road, Wilm slow, Cheshire. Proposed by Dr. Percy S. Worthington J. W. Beaumont, A. W. Hennings.

HINES : EDWARD GEORGE [*Final Examination*], Stockwoo Crescent, Luton, Beds. Proposed by Professor A. E Richardson, Arthur Stratton, E. Guy Dawber.

LANGCAKE : WILFRED [*Special Examination*], 109 Grov Lane, Denmark Hill, S.E.5. Proposed by Alfred Cox Sir John W. Simpson, Maxwell Ayrton.

MASON : HILDA FRANCES [*Final Examination*], Northcliffe Felixstowe. Proposed by Charles E. Varndell, Ernes S. Gale, Robert Atkinson.

MILLER : JOSEPH HAYDN, B.Arch.Liverpool [*Passed fiv years' course at Liverpool University School of Architectur —Exempted from Final Examination after passing Exami nation in Professional Practice*], 604 Rose Hill, Pemberton Wigan. Proposed by Professor C. H. Reilly, Robert M Young, N. Fitzsimons.

MILLS : JOHN CHECKLEY ROBINSON [*Special War Examination*] 38 Martin Place, Sydney, N.S.W. Proposed by Col Alfred Spain, Major-General Sir Charles Rosenthal Professor Leslie Wilkinson.

PAKINGTON : HONBLE. HUMPHREY ARTHUR [*Passed five years course at Architectural Association—Exempted from Fina Examination after passing Examination in Professiona Practice*], 9 Arundel Gardens, W.11. Proposed by Robert Atkinson, Maurice E. Webb, Stanley Hamp.

PHILLIPS : LIONEL BLYTHEWOOD [*Special War Examination*] 6 Wyatt Avenue, Burwood, Sydney, N.S.W. Proposed by Professor Leslie Wilkinson, Col. Alfred Spain, Major-General Sir Charles Rosenthal.

STEELE : HAROLD ROOKSBY [*Final Examination*], 87 Victoria Street, Westminster, S.W.1 Proposed by F. W. Troup Henry M. Fletcher, T. F. W. Grant.

TOWNSEND : JOYCE ELEANOR [*Passed five years' course a Architectural Association—Exempted from Final Examina tion after passing Examination in Professional Practice*] 9 Gray's Inn Square, Gray's Inn, W.C.1. Proposed by Robert Atkinson, Gilbert H. Jenkins, C. Lovett Gill.

AS HON. ASSOCIATE (1).

STEGGALL : JOHN EDWARD ALOYSIUS, M.A.Cantab, F.R.S.E. Professor of Mathematics in the University of St. Andrews, at University College, Dundee ; Woodend, Perth Road, Dundee. Proposed by the Council.

Competitions

ROYAL SOCIETY OF ARTS.

Memorial Library for a College Competition.

In order to encourage the study of designs for industrial purposes the second series of open competitions organised by the Royal Society of Arts will include a competition for a Memorial Library for a College suitable for housing a small but rare collection of books.

The conditions are as follows :

A Travelling Scholarship of the value of £150 for one year will be offered on the following conditions :

Candidates must not be over 35 years of age. They must be prepared to travel in France, Italy, Spain or Flanders for six months, which, however, may be broken up into periods of, say, three or two consecutive months.

Subject of Competition.

The subject is a Memorial Library for a College, suitable for housing a small but rare collection of books.

The superficial area of the room is not to exceed 1,500 feet. The method of arranging the bookcases and displaying a few *objets d'art* is left to the competitor. Cost is not a primary consideration, and the use of expensive woods, as well as inlays of ivory, ebony or metal, in addition to marble, can be considered.

In a suitable place a commemorative panel or some other *motif* should remind the visitor of the origin of the Library. The scheme of the ceiling, which can be treated as a space for decorative painting, as well as the pattern of the floor, must harmonise with the whole design.

A preliminary competition of twelve hours will be held in London and other centres in April 1925. Candidates must give notice of their intention to compete to the Secretary of the Royal Society of Arts, not later than 14 March. For this competition the following drawings will be necessary :

A plan of the floor, one section, and a plan of the ceiling, all to the scale of a quarter of an inch to a foot.

For the final competition two months will be allowed to the competitors, selected after the first competition. The finished drawings are to include the following :

Plans of floor and ceiling and two sections to a scale of half an inch to a foot, a detail drawing of the fireplace or some other feature, showing the complete height and treatment of the room from floor to ceiling.

Competitors should bear in mind that electric lighting and central heating are to be considered.

The competition will take place in June 1925.

LEAGUE OF NATIONS.

Competition for the Selection of a Plan with a View to the Construction of a Conference Hall for the League of Nations at Geneva.

The League of Nations will shortly hold a competition for the selection of a plan with a view to the construction of a Conference Hall at Geneva. The competition will be open to architects who are nationals of States Members of the League of Nations.

An International Jury consisting of well-known architects will examine the plans submitted and decide their order of merit.

A sum of 100,000 Swiss francs will be placed at the disposal of the Jury to be divided among the architects submitting the best plans.

A programme of the competition will be ready in February, 1925, and will be despatched from Geneva so that Governments and competitors may receive copies at approximately the same date. Copies for distant countries will therefore be despatched first.

The British Government will receive a certain number of free copies. These will be deposited at the Royal Institute of British Architects, and application should be made to the Secretary, R.I.B.A., 9, Conduit Street, W.1, by intending competitors.

Single copies can be procured direct from The Secretary-General of the League of Nations at Geneva, for the sum of 20 Swiss francs, payable in advance, but will not be forwarded until after the Government copies have been despatched.

On the nomination of the President of the Royal Institute, Sir John Burnet, A.R.A., has been appointed as the British representative on the Jury of assessors.

UGANDA RAILWAY NEW OFFICE, NAIROBI.

Apply to the Crown Agents for the Colonies, 4 Millbank, Westminster, S.W.1. Closing date for receiving designs, 28 February 1925. Assessor : Mr. William Dunn, F.R.I.B.A. Deposit £1 1s. Telegram received :—

"Reference New Railway Offices. Many requests received from competitors for extension of competition. Agree to one month extension. Please advertise this. Lists of questions and answers being sent by first mail for distribution."

THE NEW INSTITUTE FOR THE BLIND, BUENOS AIRES, ARGENTINE REPUBLIC.

An International Competition has been promoted for the Argentine Institution for the Blind, Buenos Aires, Argentine Republic.

A small number of copies of the Conditions have been deposited in the R.I.B.A. Library for the information of British Architects who may desire to compete.

MASONIC MEMORIAL COMPETITION.

Apply to The Grand Secretary, Freemasons' Hall, Great Queen Street, W.C.2. Last day for applying for conditions, 23 August 1924. Deposit, £1 1s. Closing date for receiving designs, 1 May 1925. Assessors : Sir Edwin Lutyens, R.A. [*F.*] (appointed by the President); Mr. Walter Cave [*F.*], Mr. A. Burnett Brown, F.S.I.

MANCHESTER ART GALLERY.

Apply to the Town Clerk, Town Hall, Manchester. Closing date for receiving designs, 28 February 1925. Assessors : Professor C. H. Reilly, O.B.E. [*F.*], Mr. Percy S. Worthington, Litt.D., F.S.A. [*F.*].

BETHUNE MEMORIAL TO THE MISSING.

The Imperial War Graves Commission desire Members and Licentiates of the Royal Institute to be reminded that applications to take part in the above Competition from persons other than those who had signified their intention of competing on or before 1 January 1924 cannot be considered. Due notice of this regulation was published in the Professional Press on various occasions during August and September, 1923.

RUGBY U.D. COUNCIL HOUSING SCHEME.

Members and Licentiates of the Royal Institute of British Architects must not take part in the above competition, because the conditions are not in accordance with the published regulations of the Royal Institute for architectural competitions.

BRANCH PUBLIC LIBRARY, HAREHILLS, LEEDS.

Assessor, Mr. Percy S. Worthington, M.A., Litt.D., F.R.I.B.A. Last day, 16 February 1925. Apply to :— Thos. Thornton, Town Hall, Leeds.

EXTENSIONS TO LEEDS UNIVERSITY.

The President of the Royal Institute of British Architects has nominated Dr. Percy S. Worthington, F.R.I.B.A., as Assessor in this Limited Competition.

Members' Column

MESSRS. FREDK. W. SKIPPER & SON.

Mr. F. W. Skipper has taken into partnership in his practice of architect and surveyor, his son, Mr. Eric H. Skipper, A.R.I.B.A. who has had considerable experience in London and the North of England. The style of the firm will be Messrs. Fredk. W. Skipper & Son, and the practice will be continued at 55 London Street, Norwich.

PARTNERSHIP WANTED.

Architect and surveyor, A.R.I.B.A. (33) wishes to get into touch with established architect with view to partnership. Eastern Counties preferred.—Reply Box 3115, c/o Secretary R.I.B.A., 9 Conduit Street, W.

PARTNERSHIP.

F.R.I.B.A., only surviving member of an old-established Westminster firm of architects and surveyors, is desirous of retiring from the practice, and is prepared to hear from a qualified energetic man with capital, with a view to the purchase of the goodwill and reversion, with a present share of the practice.—Reply Box 4225, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.

A gentleman prepared to engage in intense activity and intent on recovering practice lost during the war would like to join another in some way, having a like practice. A small interest only is now required, for which a capital sum would be paid. To obviate fear of embarrassment, inquiry or preliminary negotiation might be through the Secretary.—Box 2715, c o Secretary R.I.B.A., 9 Conduit Street, London, W.

DISSOLUTION OF PARTNERSHIP.

Mr. Briant Poulter [*A.*], has dissolved partnership with Mr. P. Morley Horder, and has opened new offices at 27 Buckingham Gate, S.W.1.

Minutes VII

Session 1924–1925.

At the Seventh General Meeting (Ordinary) of the Session 1924–1925, held on Monday, 2 February 1925, at 8.30 p.m., Mr. J. Alfred Gotch, F.S.A., President, in the Chair :

The attendance book was signed by 34 Fellows (including 14 members of the Council), 28 Associates (including 5 Members of the Council), 3 Licentiates, and a very large number of visitors.

The Minutes of the Meeting held on 19 January 1925, having been published in the Journal, were taken as read and signed as correct.

The Hon. Secretary announced the decease of :

Mr. Robert Lockhart McCowat, of South Africa, Elected Fellow 1898.
Mr. Samuel Osborne Blythe, Elected Licentiate 1910.
Mr. Sidney Hall Goodwin, Elected Licentiate 1912.
Mr. Rowland Brockman Moffat, Elected Licentiate 1911.

And it was *Resolved* that the regrets of the Institute for their loss be entered on the Minutes, and that a message of sympathy and condolence be conveyed to their relatives.

The following members, attending for the first time since their election, were formally admitted by the Chairman :

Mr. Arthur H. Church [*F.*].
Mr. Robert Lowry [*F.*].
Mr. Harold S. Rogers [*F.*].
Mr. T. Aikman Swan [*A.*].

The Secretary announced that the Council had nominated for election to the various classes of Membership the candidates whose names were published in the Journal for 10 January 1925.

The President announced that the Council proposed to submit to His Majesty the King the name of Sir Giles Gilbert Scott, R.A., as a fit recipient of the Royal Gold Medal for the current year.

The President, having delivered the Annual Address to Students, a vote of thanks was passed to him by acclamation, on the motion of Mr. J. C. Squire [*Hon. Associate*], President of the Architecture Club, seconded by Dr. Albert C. Seward, Vice-Chancellor of the University of Cambridge.

Mr. Maurice E. Webb [*F.*] read a review on the works submitted for the Prizes and Studentships, 1925.

The President, having responded to the vote of thanks to himself, moved a vote of thanks to Mr. Webb, which was passed by acclamation.

The Presentation of Prizes was then made as follows, in accordance with the Award :

The R.I.B.A. Essay Silver Medal and a cheque for £50 to Mr. Frank Pentland Chambers, B.A. (Cantab). A Certificate of Honourable Mention to Mr. Martin S. Briggs [*F.*].

The R.I.B.A. Measured Drawings Silver Medal and a cheque for £50 to Mr. Richard W. Briggs, B.A. [*A.*]. A Certificate of Honourable Mention to Mr. Jack Antonio Coia [*A.*].

The Tite Prize : Certificate and £100. The Tite Certificate to Mr. D. H. Beaty-Pownall. Certificates of Honourable Mention to Mr. John F. D. Scarborough and Miss Alison Sleigh.

The Pugin Studentship : A Silver Medal and £75. The Pugin Silver Medal to Mr. Donald Hanks McMorran. A certificate of Honourable Mention and a cheque for £10 to Mr. Edwin H. H. Williams.

The Owen Jones Studentship : Certificate and £100. The Owen Jones Certificate to Miss Leonora F. M. Payne.

The Godwin Bursary and Wimperis Bequest : A Silver Medal and £130. The Godwin Silver Medal to Mr. Leonard Holcombe Bucknell [*A.*].

The R.I.B.A. (Alfred Bossom) Studentship : a Gold Medal and £250. The Gold Medal and a Silver Medal to Mr. Frank Edgar Bennett [*A.*]. Silver Medals to Mr. Frank Henry Heaven [*A.*] and Mr. Charles Thomas Bloodworth.

The Grissell Gold Medal and a cheque for £50 to Mr. Arthur Edwin Cameron.

The Ashpitel Prize : Books to the Value of £10 to Mr. Geoffrey Reynolds Barnsley.

The R.I.B.A. Silver Medal for Post-Graduate Students of Recognised Schools to Miss Elsie Rogers, of the Manchester University School of Architecture.

The proceedings closed at 10.5 p.m.

Subscription to the R.I.B.A. Journal by *non-members* of the Institute is £1 11s. 6d. post free.

Arrangements have been made for the supply of the R.I.B.A. Journal (post free) to members of the Allied Societies who are not members of the R.I.B.A. at a specially reduced subscription of 12s. a year. Those who wish to take advantage of this arrangement are requested to send their names to the Secretary of the R.I.B.A., 9 Conduit Street, W.1.

R.I.B.A. JOURNAL.

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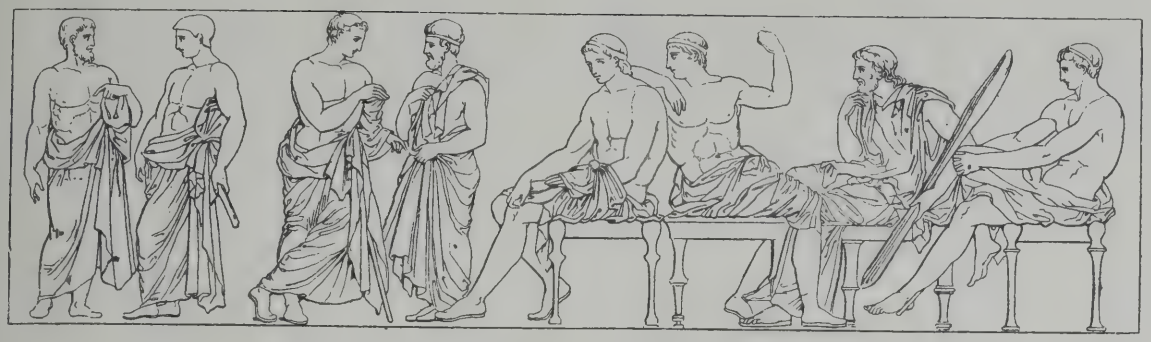


The Æsthetic of the Ancients*

BY F. P. CHAMBERS, B.A.(CANTAB.)

"The Ancients represented *existences*, we usually represent the *effect*; they portrayed the terrible, we terribly; they the agreeable, we agreeably; and so forth. Hence our exaggeration, mannerism, false graces, and all excesses. For when we strive after effect, we never think we can be effective enough. . . ."

"People talk of the study of the Ancients; but what does it mean except that we should look at the real world and strive to express it, for that is what they did . . . ."

"All eras in a state of decline are subjective; on the other hand, all progressive eras have an objective tendency. Our present time is retrograde, for it is subjective."—GOETHE (in Lewes's *Life and Works*.)

I.

TRUE history is a history of Ideas, not of kings and conquerors, nor of poets and statesmen, nor of buildings and statuary; and a true History of Art is a History of Artistic Ideas. Moreover, true history is an excellent dispenser and leveller of opinions. To study her sympathetically is to get both knowledge of the past and magnanimity for the present. If in modern times, they who are appointed dictators of taste, and expatiate on the merits or demerits of this or that phase of art, would turn back to antiquity, not for inspiration in styles of workmanship, but for a proper understanding of the artistic Ideas of the ancients themselves, much of the conflict which distracts us in our artistic production to-day would be freed from the irrelevance and fruitless argumentation which comes of the absence of the historical sense.

The purpose of this Essay is to seek to establish the standards of the ancients with respect to their own works of art—in effect to discover how far Art, as an Idea, existed in past ages, particularly in those ages now held most worthy of admiration and study, and thence to draw conclusions as to the legitimacy of modern æsthetic criteria. It is to the ideas of the ancients rather than to their forms that we shall endeavour to attract attention—not, as is too general in modern artistic education and practice, to enhance the forms at the expense of the ideas which created them. It is a matter of regret that modern architects, sculptors and painters should constantly revert to and exploit the forms of Greek or Egyptian or Chinese art (to mention but three favourite exemplars) and yet not understand nor care to know the nature and ideas of the people who produced that art and made it what it was. Art historians suffer from the fault which sets up modern standards of critical analysis and appreciation for the judgment of the products of another age and race. The customs of the past are forgotten; erudite treatises are written—on the lotus or swastika, for instance—unfolding its history as ornament and its passage from people to people and from time to time; yet the symbolism which gave it its birth and carried it to the four corners of the world is passed over.

Our complaint is not to be removed until some general recognition is forthcoming that artistic ideas have not existed from all time—that they are not innate in all people. It is our contention in these few pages that follow that the attribution of self-conscious beauty to works of art is a phenomenon of comparatively modern times—a phenomenon which can be accounted for and dated—and that art in antiquity has no *raison d'être* except in its uses and its relation to life. To the modern mind art is an abstraction. Its highest function (and to many its *only* function) is the presentation or externalisation of an absolute value,

* Awarded the R.I.B.A. Essay Medal 1925

Beauty. This beauty is independent of any representational content or of any utilitarianism. It is deliberately *designed* to that end, Beauty, by the creative imagination or fancy of a specially qualified mentality—namely, the artist's. Whence a piece of music, final and self-sufficient, almost a cosmos in miniature, and yet without a subject or a story to tell, is the modern ideal, to which all arts should approximate.

This exalted conception has, nevertheless, had a short course, and is not of so long a duration in time as the examples, treasured in our museums and galleries, that have been attributed to its presence and activity. The æsthetic sensibility—if we may call it so—an independent activity of the human mind, having no relation to the representation of images, real or fantastic, teaching no lessons, illustrative of nothing, and purposeless except in so far as it is peculiarly fitted to satisfy the unique craving for beauty, in itself and for its own sake, has had a history which we shall do well to study, and a knowledge of which will order and heal many of the artistic difficulties of the present day. To this problem we now address ourselves.

II.

Decoration as a deliberate motive is absent in primitive art. Deliberate Design, the moulding of forms to produce æsthetic effects, is absent likewise. The primitives and ancients designed because they were compelled to by their natures, by their ignorance, by their conservatism and tenacious traditions; it was left to a later time to discover that unconscious, almost elusive, character in their work and call it Design.

A child will represent water by a series of waves, perhaps thus :—

and thereby achieve design. In antiquity a race of artists would all draw water similarly and thereby achieve a convention which would become traditional. Their deliberate intention, first and last, was the representation of water; yet simultaneously they produced that Something which makes for Art.

The arts of the ancients in their purest and most spontaneous forms do not know of our modern conception of Art Value. The arts of the ancients have always a deliberate motive—utility, representation, symbolism. A figure, for example, represents a human being, an animal, a monster, a deity; it serves maybe as a fetish, an idol; it is usually magical. Ornaments are symbols; decorations are sometimes preliminary to writing and always convey a meaning. The plastic and pictorial arts are the objectification or accompaniment of ritual. Poetry and music are originally created in ceremonial dancing; and even where they begin to have an independent existence they become the appropriate vehicles of the myths and mysteries of th people, and what the people have of history, scienc and law are preserved and transmitted in verse an song. The arts of the ancients are direct and purpose ful. Their design is dictated, not by creative fancy but by national character, exigencies of material, an the continuity of tradition; while of Art Value i them, there is none.

Personal ornament is the oldest of arts. Yet it woul be a difficult undertaking to infer from its age an universality an equal age and universality in the con ception of the Beautiful. Personal ornament ha generally other motives than that of vanity, thoug never that of disinterested beauty. For instance painting of the body is ceremonial and accompanie such rites as initiation or the celebrations of love an war. Colours have definite meanings. On account o the abundance of red ochre, or on account of it resemblance to blood, red is the most common The first red body-painting may well have been th blood of beasts or enemies slain in hunting or wa and smeared on to avert sorcery. The paint of mourners may be designed to make the wearer unrecognisable to the wandering souls of the dead. Scarification and tattooing are protective like amulets. Tattooing sometimes represents the likeness of the guardia divinity. It may also indicate age, state of matrimony rank or tribe. Scarification even acquires furthe functions as a test of courage and endurance. It i never pure decoration.

The forms of primitive art are representational Motives are drawn from nature; the primitive artis has no other exemplar, and he never makes pattern from nothing. He is saturated with the principle o animism, and even his non-representative utilitaria works are often compelled to imitate nature so far a their conditions will allow. A ship imitates a fish, an eyes are painted on the prows; tables and chairs imitate quadrupeds; the lion's foot of modern furniture is only a quaint survival of an earlier age when it hac a real meaning. Primitive art from beginning to end is guided by utilitarian and superstitious necessity and its forms are the forms of nature. An ancient Chinese once said: "All ceremonial usages are the embodiment of the ideas suggested by heaven and earth; take their laws from the changes of the four seasons; imitate the operation of the contracting and developing movements in nature, and are conformed to the feelings of men. It is on this account that they are called the Rules of Propriety; and when anyone finds fault with them he only shows his ignorance o their origin."*

If we who live in cities and have renounced agriculture as a livelihood, and Nature as a religion, find it hard to understand the unavoidable naturalism o

* W. R. Lethaby, *Architecture, Mysticism and Myth, Ch.* 1.

primitive art, we are then in danger of misunderstanding primitive art also.

Primitive art, always purposeful and naturalistic, is also traditional. The modern view—dating from the innovations of the Romantics, and holding, as it does, that all great art is untrammelled and free of restraints —again fails to appreciate primitive art, an art which knows of no liberties, but is bound by obstinate traditions. "Primitive man," says Herbert Spencer, "deviates into novelty only through unintended modifications." His arts are not devised, but evolved, like languages.

Traditional conventions are perpetuated long after the original naturalism or purpose has been lost by continual repetition. Hence they may be transferred to another material. Technic patterns are usually representations in another material. The stitch and seam of cloth are reproduced *ornamentally* in textiles, woven grasses and basket-plaiting on pottery, the binding thongs of flint weapons on bronze spear- and axe-heads. The history of much architectural ornament is traceable to changes of material. The Egyptian gorge and filet have their source in an architecture of reeds; the Lycian tombs and Doric and Ionic orders in an architecture of wood. The Hindu temple with its cunilinear spire is directly derived from the sacrificial rites of the ancient Aryans. Together with the royal umbrella as its crowning feature, there is not in it a detail whose origin cannot be recognised.

The doctrine of the Pure Art Value and of Significant Form is accordingly an historical heresy which has no justifying precedent in those art periods which its adherents most revere and affect. Art in the past has had a relation to life which was not æsthetic. The pre-historic cave-paintings, which have so recently caused a furore in both artistic and ethnological circles, are known to have been connected with sympathetic magic. We have now, particularly among sculptors, a school of Ægyptophils. But the Egyptians were not artists in our sense of the word. The huge incised reliefs in the temple walls of Thebes were religious and historical records. The paintings in the tombs, crowded with eschatological scenes and hieroglyphics, were no less magical than the pre-historic cave-paintings, and no more artistic in intention; they were consigned to eternal darkness and not to æsthetic enjoyment. It would be difficult to justify on æsthetic grounds the deliberate elimination of unnecessary detail, which is so much admired in the sculpture of ancient Egypt; but on the grounds of the existence of a tenacious convention, dating from a time when sculptors had not the skill to work otherwise than in extreme simplicity, a justification is simple. In the Fourth Dynasty, Egyptian sculpture was developing a realism which, unchecked, might have been indulged in nudes like the Laocoon and draperies like Bernini's. Egyptian architecture was controlled entirely by inherited tradition, and its forms were governed by the elaborate cosmic symbolism of the Egyptian religion. The temple was built in the likeness of the world; the floor naturally represented earth, the ceiling sky; each part was decorated in consonance with its meaning; column- and wall- bases with vegetation, in the midst of which animals were occasionally depicted. The ceiling was blue, bespangled with five-pointed stars. "The vultures Nekheb and Huti, the goddesses of the South and North, crowned and armed with divine emblems, hovered about the central nave of the hypostyle halls . . . the depths of the firmament seemed to open to the eyes of the faithful, revealing the dwellers therein. There the celestial ocean poured forth its flood, navigated by the sun and moon with their attendant escort of planets, constellations and decans."*

Such instances are illimitable. The purest critics, who abhor the sculpture of India because of its disproportionate use of religious accessories, or because of its grossness in Western eyes, show an ignorance and mis-appreciation of an iconography of excelling splendour and mythological richness; where every carved detail is a symbolic attribute, and where even the poses of the hands are stereotyped and significant. There is a wealth of fascination in mythological representation and in the pure humanity of ancient sculpture upon which it is now considered bad taste to insist. Yet if stories are not read into the works of art of the past, and monuments are considered to be monuments to absolute beauty, instead of to a god, to a warrior or statesman, then the motive of ancient art is forgotten for qualities which were unthought. We have yet to learn that the anthropologist rather than the connoisseur is the better qualified to criticise ancient art.

Nor can the copious enrichment, which is sometimes characteristic of ancient art, be produced as evidence of a pure æsthetic sense. The tendency of primitive art, unless there is adequate reason for the contrary, is to labour a surface with as minute filigree as technical skill will permit. The modern view, which is prejudicial to *crowding* and finds in the reduction of ornament to a minimum an indication of refinement, is again an historical heresy. From the wood-carving of New Zealand, the porcelain of China, the brass of Benares, the carpets of Persia, to the reliefs of Khorsabad, the mummies of Egypt, the frescoes of Minoan Crete, and the throne of the Olympian Zeus, the same theme of elaboration is read; it is almost universal in ancient art. The psychology of this *horror vacui*, as it may be called, has never been properly studied.

* W. R. Lethaby, quoting Maspero, *Architecture, Mysticism and Myth*.

Quite apart from the love of the workman in the exercise of his craft, if the *horror* had a place in consciousness, then it was a feeling that extravagance was synonymous with sincerity. Extravagance is a manifestation of wealth and power ; it intensifies the presentation of simple forms, and is, like music and incense, a concomitant dignifying ceremonial. The sculptors of the Hindu temples, consecrating their lives to a meticulous and exacting art, believed they acquired merit, as the Brahmins reciting mantras or as pilgrims journeying to the holy places. The use of the most precious materials and the deliberate triumph over intractable materials must have had the same religious bravado, the same deeply sincere endeavour to make a work conspicuously worthy of its purpose. Geometrical exactitude, for instance, in the orientation of altars and temples, is the analogy of enrichment and derives itself from the same state of mind.

If this be the character of ancient art, what there is of appreciation and criticism must be crude in the extreme. The ancient critic only saw in his works his gods, his heroes—in short, the things he lived and laboured for. Artistic judgment, if such be worthy of the name, was confined to the admiration of size, costliness and cunning workmanship. There is, for instance, constant reference in legend and primitive lore to dimensions and precious materials in all such passages as are descriptive of works of art. The typical paradise-vision luxuriates in golden palaces and jewel-bearing trees, set on mountains of precious stones. The necessity of hugeness or extrinsic value was carried to such an extent that works of art were not worthy unless executed on the greatest scale in the rarest and finest materials possible. The Bible descriptions of the Ark and Tabernacle, Solomon's Temple, Ezekiel's Vision, and the Holy City of the Apocalypse are fair examples of this insistence on measurement and the almost child-like marvelling in " the building of the wall it was of jasper ; and the city was pure gold like unto clear glass. And the foundations of the wall of the city were garnished with all manner of precious stones. The first foundation was jasper ; the second, sapphire ; the third, a chalcedony ; the fourth, an emerald ; the fifth, sardonyx ; the sixth, sardius ; the seventh, chrysolyte ; the eighth, beryl ; the ninth, a topaz ; the tenth, a chrysoprasus ; the eleventh, a jacinth ; the twelfth, an amethyst."*

And such is the Aesthetic of the Ancients.

Primitive life is simple, and its laws are above all things practical. The primitive mind is objective, and its abstractions are presentable only as symbols. Its idealism is moralistic. The Highest is the Good, and the Beautiful is merged therein, undiscovered and unquestioned. The Good and the Useful are ideas that man has made and understood since history began ; the Beautiful, the concept of a Something desirable for its own sake, came to him later. Ancient art, as ancient life, is practical ; and its highest achievements are moralistic. Its excellence consists in its fulfilment of the practical functions of life.

The gradual approximation of art to the Beautiful which we in our time have been accustomed to accept as the natural order of things, is a psychological development of many centuries. It will presently be our duty to trace its causes and results.

III.

Our modern exaggerated admiration for Hellenic antiquity has blinded us to the average primitiveness of the Greek. Since the Renaissance he has been exalted divine-like above his peers, and in his art it is sacrilege to consider his conceptions other than the most perfect in the world. To suggest, therefore, that the Parthenon was a temple only, and not a work of art, built by a race of men who flourished in the childhood of civilisation, might be thought eccentric at least, and perhaps ungrateful. Actually, the evidence goes to prove that the Greek was not so far removed from the state of primitiveness in art, already discussed, as to warrant a belief in any highly developed æsthetic gifts in his mentality, or to raise him in this respect conspicuously above the rest of the Ancients. Greek art, according to the view accepted since Winckelmann, had three phases, Archaic, Mature and Decadent. The Parthenon, B.C. 454–438, the supreme example of Greek maturity, is taken as the turning point. These divisions, interpreted according to the foregoing paragraphs, will correspond with particular states of the Greek mind, namely, that down to the fifth century B.C. the Greek was a simple primitive in æsthetic conceptions ; in the fourth and in Hellenistic times he was developing a conscious æsthetic, which Rome ultimately inherited. This transition from the primitive, or ancient, æsthetic to the later will have for us particular interest ; it is the first in the history of Europe, and our modern æsthetic finds its origins therein.*

Greek art at its best was not an Art. It was the expression of a people's Life and Thought, and its excellence was judged by its contemporaries as such. Its temples were the houses of its gods ; its statues were idols. Yet there are students of the antique who, prostrate at, say, the feet of the Hera of Samos, ecstatically propound their truism that representation is the most degraded function of sculpture. If it was not representation, it would be instructive to learn to what other end the Hera of Samos was carved.

Pausanias wrote of the Acropolis at Athens : " All the statues and everything else equally are votive

**Rev. xxi,* 18.

* Archaistic revivals, e.g., Saïte, in Egypt, 600 B.C., and Nabonidus, in Babylon, 550 B.C., are not European and do not concern us here. But they may indicate similar æsthetic revolutions.

offerings."* When Pheidias gave the Hellenic world its plastic masterpieces, the greatest panegyric accorded him was not that he had created Art but that he had added to the received religion of the State. The grandeur of his Athena Parthenos was the grandeur of Athena herself, embodied in gold and ivory. A legend runs that Zeus testified to the supreme excellence of his image at Olympia by a miraculous sign.† But modern archæology reads false motives in ancient art with tedious perversity. We have, for instance, the controversy over the column supporting the right hand of the Athena Parthenos. Pheidias, it is said on æsthetic grounds, would never have introduced this clumsy expedient. But Pheidias' intention was to represent Athena. The much-discussed column was neither an æsthetic mistake nor a structural convenience but a cult-attribute as necessary to the goddess as her ægis, helmet and shield. Similarly, to give another instance, Fergusson, the architectural historian, is somewhat perplexed by the phenomenon of the caryatid. He presumes to excuse the faultlessness of the Greek taste by adducing an oriental origin for this " very questionable form of art."‡ Students of Greek religion appreciate the caryatid as an attempt on the part of the sculptor to represent the tree-spirit which inhabited the timber prop of the early wooden temples.

A detailed examination of the evidence discloses the Life in Greek art and the absence of æsthetic until its decay. There is actually no word in Greek for Art. Τέχνη is an approximation ; it means rather a *craft* or a *device—art* in our own *old* English sense. Τέχνη only begins to verge on the sense of Fine Art in Plato. The Greeks had a word for Beauty, and Plato has our perpetual homage as a lover of beauty. But, however much it may violate our most cherished prejudices, the Greek associated beauty with ethic, not æsthetic. Like the primitive, he was not too conscious of a difference between the Good and the Beautiful. He could not have comprehended our concept of Art as unique in Life, inasmuch as it is the purer for being useless. The phrase καλοκἀγαθός exemplifies his state of mind to some degree. Καλός, besides meaning *beautiful*, can also be interpreted as *good* or *useful* ; its best equivalent is probably *excellent*. Aristotle, in a philosophic age, when art had all but died, was the first to distinguish formally between the Good and the Beautiful.§ But though it was he who gave currency to the æsthetic terminology of the Greeks,‖ it is curious that he still dissociated Art from Beauty. It was not until the time of Plotinus that the problem of Art as the externalisation of Beauty was dreamed of ; and we are generally agreed that when Plotinus flourished the Hellenic artistic genius had long since disappeared.*

Μουσική is the only word which may be said to have had an æsthetic significance before the fourth century, but it referred to the arts presided over by the Muses. It is interesting that the word often indicated *fitness* or *propriety*. In parenthesis, note that there were Muses of History and Astronomy, which are not arts in our sense ; there were no Muses of the plastic arts. If this omission means that architecture and sculpture, for example, were less truly arts than the *musical* arts *par excellence*, we have further corroboration of the lack of æsthetic sensibility among the ancients in regard to the plastic arts at least. The Greek language shows no consciousness of Pure Art Value, and the only conclusion is that Greek art neither required this value nor knew of it.

Accordingly, the finest appreciation in ancient Greece was ethical, or at any rate related to religious and practical life. Plato, although he is sometimes supposed to have been un-Greek in many of his sympathies, is here typical. The only literary criticism, worthy of the name, prior to Aristotle, made morals its standard ; and the best example of this is seen where we should least expect it—in Aristophanes' *Frogs*. Thucydides applied his ideal of Truth with unprecedented vigour in the writing of history ; yet he was a consummate artist. Evidently the Greeks could create what we have chosen to call Art, without the thought of an art.

Of the references to works of art in the earlier Greek classics none shew any criticisms at all commensurate with our own. The paucity of these references, indeed, shews some lack of a purely artistic interest. But what references there are seem to be childishly simple. Greek curiosity began and ended with an account of what the work represented, what it was made of, and what its size was. Herodotus is concerned with material value and dimensions. He travelled perhaps more extensively than any of his contemporaries ; he was the contemporary of Pheidias, and, simple as he was, must have been conversant with all the brilliance and culture of Periclean Athens, yet he did not attain to any appreciation more refined than the following : " In the temple is a sitting figure of Zeus, all of gold. Before the figure stands a large golden table, and the throne whereon it sits and the base on which the throne is placed are likewise of gold. The Chaldæans told me that all the gold together was eight hundred talents in weight. . . ."† And that is a fair sample of Herodotus. To him, as to all Greeks, representation was the only object of sculpture. Socrates, " the wisest of the Greeks," and himself trained as a sculptor, was conscious of no other object in sculpture ; he was the

* Pausanias, *V, xxi.*
† Pausanias, *V, xi.*
‡ Fergusson's *History, I, iii, ch. ii.*
§ *Metaphysics, XIII,* 3. *Vide* Encyclopædia of Religion and Ethics, Article *Aestheticism,* for moralistic view of Greek Art.
‖ Ἁρμονία, &c.

* Butcher's *Aristotle's Poetics.* Intro.
† Herodotus. *I,* 183.

junior of Pheidias by some twenty years. If Socrates was the first of æstheticians, and amateurish at that, it is significant that Greek art had reached its zenith before it had entered into the curiosity of men to ask what Art was. Plato founded his antipathy to works of art on the score of their being *copies*. Aristotle made representation (*μίμησις*) the end and aim of Art, although it was representation of a very expansive character. Even music, which to-day is considered the purest of the arts because it is the least representational, conformed to the mimetic doctrine. " In rhythms and melodies," said Aristotle, " we have the most realistic imitation of anger and mildness, as well as of courage, temperance and all their opposites."*

Descriptions of sculpture and painting in the Classics are, therefore, concerned with representation. Hesiod's Shield of Heracles and Homer's Shield of Achilles are superb examples. The greatest merit of a statue was that it seemed to live, and of a painting that it deceived the beholder by its realism. There are scores of legends to this effect. A statue of Heracles by Dædalus had to be tied up to prevent its running away. In the Greek Anthology, Praxiteles' Niobe is given as saying :—" From the life the Gods made me into a stone, and from a stone again Praxiteles wrought me into life." At Syracuse there is said to have been a statue of a man limping, and " the spectators seemed themselves to feel the pain of his ulcers."† That sculptural portraiture was intended to be photographically realistic is true by the great importance attached to the discovery of casting the features from life. Among painters, the story of the competition between Parrhasios and Zeuxis is well known. The one painted grapes, which the birds came and pecked at ; the other seemed to cover his picture with a curtain, which itself was discovered to be the picture. Accordingly Zeuxis, because he had deceived men, was awarded the prize, whereas Parrhasios had only deceived the birds. The effect of a picture on birds must have been a regular criterion of excellence. Snakes were painted which frightened the birds away, and we are to believe that this device must have become the scarecrow of antiquity. So the last painting was representational, and according to Pliny the Elder the highest aim of a painter was " to produce about his figures the illusion of ambient space."‡ Often representation was carried to the extent of pure animism. The statue of Theagenes, the boxer, was thrashed by his rival, and when the statue fell and killed him, it was indicted for murder and thrown into the sea.§ The legend of Pygmalion and Galatæa, although late in its origin, may conveniently epitomise the antique point of view in sculpture. Except for the love of anecdote and the marvellous, which are the principal interests of some minor writers, the above is about the extent of Greek artistic criticism. The notion of formal self-conscious beauty never appears.

To the non-representative art of architecture the Greek attitude is, therefore, difficult to define. Evidently architecture, as architecture, did not interest the Greek ; it more nearly approached our concept of *engineering*. Its existence does not, therefore, invalidate the mimetic doctrine. On the whole a temple, for instance, was the house of the God, and only the God concerned the Greek ; tombs were memorials, and only the buried dead concerned the Greek. Remarking on the use of architectural similes in the treatise of Longinus *On the Sublime*,* Prickard says : " Architecture, perhaps, did not greatly stir the Greek mind ; one of its purposes was to provide a framework for beautiful carving or pictures ; but in itself it was merely useful. Nor was it far otherwise in Roman ideas. The imagery repeatedly drawn from walls and their constituents in this treatise touches on something new." Even so late as Pliny's description of the Mausoleum, it is the sculpture which attracts most attention.

The only possible direct example of *taste*, in our sense, which Greek architecture provides is the architectural refinement. The optical correction theory held good since the time of Pennethorne and Penrose, but this has been discredited by recent research workers. Goodyear, still presupposing deliberate æsthetic sense in the mind of the Greek architect, advocates the view that the Greek preferred curves and systematic irregularities. A. B. Cook, in the face of this scholastic wrangling, suggests that the simplest solution is the most possible—that the origin of refinements was practical, not æsthetic, and that drainage may once have been their purpose. But this only accounts for horizontal curvature. Our own context here might suggest that there was some symbolism evinced which the usual conventionalism of ancient art had perpetuated. The Greek architect, it is possible, might have desired to represent the absence of straight lines in Nature, or had reproduced the irregularities of the prototypical wooden construction. It is unfortunate that except for one obscure reference in Vitruvius, there is no mention of refinements in the extant Classics, and the whole subject is one where argument is at present useless.

Nor is it likely that the canons of the Greek sculptors had an æsthetic purpose. Polykleitos desired to represent in his canon the perfect human body—that is, the body which could give the best account of itself at the

* *Politics*. *V, viii*.

† Pliny. *Natural History*. *XXXIII, ii*.

‡ This and Note † immediately above are from Pliny's *Natural History*, which the present writer can be excused for using here, since Pliny's own references were generally Greek, and represent Greek opinions.

§ Pausanias. *VI, xi*.

* The date of Longinus is uncertain ; but he was certainly not prior to the first century A.D.

Olympic Games. His must have the same synthesis from which Tait-Mackensie, the American sculptor, produced his ideal human form from some hundred Yale and Harvard athletes. The canon is only evidence of the persistence of *fixed types*, a principle which pervades Greek art, literature, drama and Greek life generally.

Greek art lost its perfection so soon as it became conscious of art values. The new consciousness is already beginning in the Periclean age. The scene was Athens then, and its growth was remarkable for rapidity. The Parthenon, as the symbol of united Hellas, and as such the avowed policy of Pericles, was thereby acquiring other functions than the simple cult of Athena. Pericles himself, in his famous remark in the Funeral Oration : " We study beauty in her simplicity " must have felt the value of the beautiful for its own sake. Praxiteles and the post-Pheidian artists may have realized his view. But it is certain enough that Aristotle and his pupil, Alexander the Great, first shewed new ideas fully and universally in the course of formation. Alexander must have genuinely appreciated many of his teacher's enthusiasms, and in his journeys of conquest must have taken a scholar's interest in what he saw. His sending of specimens home to Aristotle for the writing of the *Natural History* is probably typical. In his inclination to adopt what he most admired for his own purposes, his behaviour is reminiscent of Charles VIII in that monarch's invasion of Italy ; and his attempt to apply the delicate architectural forms of the Greeks to his great city schemes marks the inception of architecture as plan and structure with a stylistic form added. Lysippus, the sculptor of the time, was diligently revivalistic. He was the author of the first sculptural allegory. His own *canon* was intended to improve on that of Polykleites. His busts of Alexander are exhibitions of æsthetic affectation.

One unmistakable sign of the change is manifestly the consciousness of history and the admiration of the past. The Parthenon, as a memorial to the Persian invasion, shows a consciousness of history, and thereafter there must always have been a reversion to the glories of Pericles. The change in the æsthetic standpoint was becoming more consolidated in Rome, who admired Greece and aped Greece. Possibly the transition had already been effected in Alexandria and Pergamum, both descendants and admirers of Hellenic culture.

Roman art was Greek absolutely. In sculpture, Roman admiration for the original Greek masterpieces caused their unlimited reproduction for the embellishment of Roman buildings. It is noteworthy that almost all our specimens of Greek sculpture have been obtained in their Roman reproductions. It is not surprising that we should have the phenomenon of a revival of Greek sculpture in the quaint, but insipid, archaisms of Pasiteles and his school, which was enthusiastically welcomed by contemporaries.

Roman architecture historically is a direct translation of the Greek. The translation was rendered practicable from the nature of the earliest Roman architecture, which was wooden in construction with terracotta ornaments affixed. This principle made the application of Greek forms to a bare constructional core an unavoidable process. The principle served at once to distinguish two elements in architecture, construction and ornament, which never before in the history of the art could have been so treated. Hence Rome initiated the idea of architecture as *decorated building* and gave us the *façade* and *elevation*, which dominate up to the present time. Rome was establishing in Fine Art a new mentality that desires forms, neglectful of their meanings and motives.

It is enough to notice the respect with which the Roman conquerors treated Greece. It had always been the acknowledged right of a conqueror to plunder the treasures of conquered provinces. Probably the Persians represent the climax of that right in the huge halls which they built to house their trophies and the more visible wealth of empire. The spoils of war were accumulated for their intrinsic value and served the purposes of capital and self-gratulation. But Rome, if she enriched herself by her expeditions in Greece, did not covet her Greek trophies because they were materially precious, but because they were Greek—that is, because they had a value for their own sake, an artistic value. So Marcellus proudly displayed the spoils of Hellenic Syracuse to the Roman populace. The generals Mummius and Sulla set the fashion of transporting Greek works of art wholesale to Rome. Augustus and the Emperors succeeded to their example, and statuary became as much a part of the pageantry of military triumphs as captives and slaves. Nero's Golden Palace was a treasury of Greek art. Caligula even desired to remove the Olympian Zeus to Rome and substitute his own likeness for that of the god. Similarly, Roman Emperors devoted much care to the restorations of Greek shrines, and made offerings of their own to shrines of special sanctity. Hadrian is repeatedly praised by Pausanias for this kind of pious generosity.

Roman Philhellenism had many peculiar corollaries, one being the littérateur and connoisseur, the Epicurean in letters and art, who cultivated Greek manners. The Roman patrician, with his Greek possessions, would assume inevitably all those qualities now associated with modern collectors of antiques and Old Masters. Lucian, originally a sculptor, was the complete connoisseur and critic. His synthetic construction of the ideal Panthea is reminiscent of some of our modern artistic eclectics. Quintillian has the same

tendencies: as also Cicero, Varro and many lesser writers. The most perfect types of this early connoisseurship are the Plinies and Vitruvius.

Pliny the Elder's opinions on art are found in his *Natural History*. Sculpture and painting concern him most. Like the modern critic, he loved to theorize. He had also a definite consciousness of a History of Art, a consciousness naturally born of theory. He believed Art was for contemplation, for he wrote: "We need leisure and profound stillness for the admiration of art."* These are ideas which would have startled the Greeks, whom he idolized so much. Pliny the Younger, in his Letters, shows himself at once to be the polite and elegant dilettante. The letter which describes a recent purchase, a Corinthian bronze, maintains that attitude perfectly.† In another letter, which describes the aspect from his Tuscan villa, he indicates a real æsthetic appreciation of landscape, which is unique in antiquity.

Vitruvius has recently been much controverted, and, as is generally the fate of all idols sooner or later, serious attempts have been made to discredit his authenticity. That he was an amateur is possible from the fact that, for all his parade of engineering and building knowledge, he omits to explain the arch and the vault, the great features of Roman architecture. But, whatever be his justification and excuse as an architectural writer, he is important as being the only architectural writer of antiquity whose works are extant. His laws and proportions of the Orders show a thoroughly theoretical mentality. He is devoted to his Greek authorities. He is an archæologist and recommends the study of archæology. "Unless acquainted with history," he writes, "the architect will be unable to account for the use of many ornaments which he may have occasion to introduce."‡ Hence architecture becomes the study of scholars, and Vitruvius goes so far as to prescribe moral philosophy as part of the true architect's training. He recounts with some ostentation his own thorough education, though his barbarous style as a writer does not always vindicate the allegation. He differentiates the function of the architect as the creator of beauty from a mere master-builder. The beauty of buildings, according to him, gives merit to the architect, "on account of the proportion and symmetry which enter into the design, but the building and the magnificence thereof are respectively given by the workmen and the money spent."§ Furthermore, as particularly recalling modern architectural practice, he recommends the study of geometry, "whereby delineations of buildings on plane surfaces are greatly facilitated."¶ He describes the use of plans and elevations, the latter "to be slightly shadowed to show the forms of the intended building." He knows what perspective is and mentions the theory of the vanishing point. In short, his resemblance to the modern architect is astonishing.

Together with Vitruvius, it is interesting to cite Pausanias. From Pausanias, as from Pliny the Elder, evidence has already been obtained for the primitive Greek view; for Pausanias was a primitive at heart, and his chief interest in art was mythological, as his descriptions show. Herein he resembles Herodotus. Yet he was the contemporary of Hadrian, and the new æsthetic is not absent from his famous *Description of Greece*. The beauty, elegance and decorative nature of works of art for their own sake are notions which are common to him. He sometimes tends to decry the contemporary for the antique in true modern fashion, while at other times he speaks of the rudeness of the antique. He accepts the function of the art critic and has some consciousness of both styles and art-history.

A digression into the appreciation of Natural Beauty by the ancients reveals an analogous æsthetic revolution. It is noticeable that the female nude was never considered a subject worthy of representation for its own sake until the decline of Greek art. Praxiteles' Venus is the first executed by a Greek sculptor, and even here the sculptor is constrained to find an excuse for nudity by representing the goddess at the bath.* Kephisodotus, the father of Praxiteles, was the first sculptor to represent a baby, an example which Praxiteles himself followed in the Hermes. Eros was normally an adolescent youth; and the Cupid-type was created and popularized in a later age. It is evident that until the fourth century, sculpture was associated with cult, had no liberties as a Fine Art, and, therefore, never represented women and children for their own sake.

Nature supplies primitive art with motives, but only by reason of its relation to religion and symbolism. At the same time, metaphors taken from natural phenomena pervade Greek literature from the earliest times; and in Homer, for example, one recognises observations which continually belie the legend of the poet's blindness. But this does not necessarily indicate an æsthetic appreciation of nature. How far the Greek admired his groves and temple precincts cannot be estimated, though mere love of seclusion could not have been the only cause of Plato's holding his School in the Academy, or of Euripides' retirement, Thoreau-like, into the wilderness. Nevertheless, the

* Pliny. *Natural History*. *XXXIII to XXXVI.*
† Pliny. *Letter III, vi.*
‡ Vitruvius. *I, i*
§ Vitruvius. *VI, xi.* ¶ Ibid. *I, i.*

* The Ludovisi Throne, though its meaning is doubtful, is obviously connected with cult. The presence of nudes here and elsewhere, prior to Praxiteles, does not alter the course of our argument.

sites of Greek temples were not selected for looks; they were sacred from remote antiquity. "Alike on the cape of Sunium, the cliffs of Selinus, the Acropolis rock of Athens, on the plain of Paestum and the muddy flat of Ephesus, the Greeks indifferently founded their great temples."* The Phaedrus represents Socrates as saying: "Trees and country places have nothing to tell me; men in the city have." The Roman Lucretius thought mountains were waste ground. Nature by the Greeks, like their arts, is judged ethically. She is good when sympathetic to man. Rivers are friendly as irrigating agencies, but hostile in flood. Nature is haunted (ζάθεος), not beautiful; and the Greek only delights in the nymphs and fauns who impersonate his rivers and trees. The same animism of the primitive is co-extensive with Greek life and thought.'†

Aristotle's *Natural History* is the real beginning of an interest in Nature which is neither religious nor anthropocentric. The Nature-sensitiveness which appears as early as Sophocles is not of this order.‡ Theocritus, the Alexandrian, is the first of pastoral poets, and he flourished in the third century B.C. The Romans have instinctive sympathy with Nature, which may have been the survival of early farming memories in men who had since become weary of warfare and town life. The Roman country villa has no analogy in Greece. We have already mentioned Pliny the Younger in this connection. "You would imagine," he writes, "that not a real but some painted landscape lay before you, drawn with the most exquisite beauty and exactness; such an harmonious and regular variety charms the eye which way soever it throws itself."§ Seneca proposed to visit the wild districts of Bruttium and Lucania by way of change and relief. Lucian refers to the comfort (παραμυθία) of seeing the country. Roman art in the wall-paintings of Pompeii and the catacombs reveals a search for beauty in natural forms. There was a painter, contemporary with Augustus, who, according to Pliny the Elder, introduced a delightful style of decorating walls with representations of villas, harbours, landscape gardens (*topiana opera*), sacred groves, woods, hills . . . . in short, any scene that took his fancy."¶ The Corinthian acanthus and the arabesque show advances in the same direction.

Rome evidently produced an æsthetic comparable with our own.

IV.

The advent of the Middle Ages produced strange contrasts, particularly in the matter of continuity of Roman traditions. In some respects the break with Roman traditions was so slight as almost to suggest their interrupted continuity up to the Renaissance. The Romanisation of both Church and State and the Classical survivals in literature, philosophy and intellectual culture generally are phenomena which histories do not sufficiently emphasise. The break with what may be called Paganism was, however, more definite; though even here the adaptation of numerous pagan ceremonial forms gave the externals of Christianity a less revolutionary aspect.

Roman art did not survive the dissensions of her last centuries. The new styles, Romanesque and Byzantine, indeed, had definite links with antiquity, inasmuch as no art is wholly new. Classical models, for instance the basilica, were used not out of æsthetic admiration but out of necessity and convenience; even decorative details were developed by unskilful and ignorant workmen, ostensibly reproducing classic forms. The great mediæval arts were in many ways the results of barbarians solving problems which never beset the ancients, often using materials which the ancients would have despised, with the old Roman types of basilica, dome, mosaic, etc., as their proper craft traditions. The occasional conversion of ancient monuments to the service of Christianity, and the pillaging of the ancient palaces and forums for their materials, gave that tradition obvious encouragement.

But the idealism of art was totally reversed. The Christian was a primitive in æsthetics. Architecture was no longer a Fine Art, and sculpture again was representational. The highest acquisition of the mediæval builder and maker of images was not to create Art but to glorify God; the æsthetic of formal beauty had completely disappeared for the last time in the history of Europe. To the Christian, and to the early Greek, a temple was a temple; a statue was a personage, and its value was in proportion to the value of the personage, even though Praxiteles had been its sculptor. Cathedrals were built to accommodate worshippers and to be the scene of religious rites, not to adorn cities; sculpture and painting became the Bible of the illiterate. There was a legend that Pheidias was a demon who turned men into stone—so far, indeed, had the appreciation of his art been lost. Similarly the æsthetic appreciation of Nature disappeared. The sensibility to Nature was teleological, a pure religious adoration, or was a crude animism which associated natural phenomena with the dominion of evil demons. Natural Science only amounted to some superstitious lore plus the commentaries of Aristotle and Galen.

The Christian, triumphantly oblivious of artistic beauty, was therefore not slow to give proof of his hatred of pagan works. We have mentioned occasional survivals. Generally, Constantinople and a few cities of the Byzantine Empire were the single exceptions

* W. R. Lethaby. *Architecture, page* 242.
† Vide W. R. Hardie. *Lectures on Classical Subjects.*
‡ e.g., Chorus describing Kolonos in *Oedipus Koloneus.*
§ Pliny. *Letters. V, vi.*
¶ Pliny. *Natural History. XXXV, i.*

where the artistic remains of Classical civilisation were cherished and protected. Even the Olympian Zeus found a haven in the city of Constantine, and indeed the traditional likeness of the bearded Christ may have had in that masterpiece of Pheidias its real prototype. But the systematic destruction of pagan shrines and relics, from the time of Theodosius onwards, is the rule; and history describes for us a long chapter of frenzied vandalism, which our own enlightened but unsympathetic age is far too ready to condemn. Gibbon gives a fine account of this misdirected exercise of early Christian zeal. For instance, the Christian registered his abhorrence of non-Christian art with such methodical energy that a great school of painters like the Manichees, was annihilated, except for some very rare specimens which modern archæology has accidentally discovered. The Marcus Aurelius monument now in the Capitoline Piazza at Rome was only preserved because it was thought to represent the Christian Emperor Constantine.

Practically all the great figures of mediæval religion, therefore, took a Puritan view of the Fine Arts. Tatian, in a treatise which is typical, devotes a passage to enumerating the various criminals to whom the pagans have raised statues, which he exhorts his brethren to destroy and bury, that the memory of their crimes may be the more easily forgotten. Tatian's appreciation was that of mediæval Christianity as a whole; the same feelings are expressed by writers and preachers from St. Gregory to Savonarola. The prejudice against the sensuousness of ancient art has in a small measure persisted till to-day.

Of their own arts mediæval writers are "disappointingly jejune."* Evidently, as for the ancient Greek, Fine Art, apart from its meaning, was not sufficiently important a thing to be discussed. Yet here and there passages of some grandeur do occur, and they are evidence first of the religious fervour of the mediæval mind, and secondly of the didactic and illustrative nature of its arts. "If the faithful soul chance to behold the effigy of our Lord's passion expressed in all its lineaments, then he is pricked to the heart; if again he see how great tortures the Saints endured in their mortal bodies, and how precious a prize of eternal life they won, then doth he receive encouragement to a better life; or, beholding how great is the joy of heaven, how awful the torments amid the flames of hell, then he is cheered with hope for his good deeds, and smitten with fear at the thought of his sins. Work, therefore, now, good man, happy in this life before God's face and man's, and happier still in the life to come, by whose labour and zeal so many burnt-offerings are devoted to God!" Yet at the same time this writer is not forgetful of "the light streaming through the windows, the priceless beauty of the glass, and the variety of this most precious work."

Professor Prior says of Gothic sculpture: "The arrangements and motive of its subjects were outside any cult of beauty, or allegiance to any æsthetic philosophy . . . . their function was exhortation; the meaning of their works was the soul that ennobled them; the purpose was to teach all that was best worth knowing, but with secondary thought as to pleasing the eye, and with no idea at all of tickling the æsthetic fancy of the connoisseur."* He also quotes from St. Gregory: "What writing is for those who can read, painting is for the uneducated, who can only look."* And from a thirteenth century French prelate: "Pictures and ornaments in churches are the true teachings and scriptures of the laity."* The whole scheme of ornamentation of the French cathedrals was intended to typify the Christian cosmos. It was a plastic encyclopædia of contemporary thought.

Mediæval art was Exposition and Faith, and imposed upon it was the same strict conservatism of the ancients. The second Council of Nice decreed in 787 A.D.: "The execution of images is not the invention of painters, but is proved to be the legislation and tradition of the Catholic Church, and of our ancestors who built."*

The modern concept of deliberate Design was unknown to the Gothic craftsman. He worked with the sublime faith that can leave designs to take their own course. Beauty in his cathedral was achieved by slow perfecting of parts, mastery of workmanship, economy and tradition. To imagine that the west front of Wells or the nave of Salisbury were designed for an æsthetic effect is a ridiculous misrepresentation of the true spirit of those masterpieces. One might as well think the spider weaves his web for our personal delectation. There is in them the greatness and wonder of Karnak; and until the modern necessity of an æsthetic is obsolete, the real source of Gothic achievement will never be understood. Gothic is not an Art. This was the mistake the Romantic Revival made. Gothic was the creation of men who did not hesitate to burn the priceless marbles of the pagans for lime, and who would without compunction destroy their own treasures of one generation to rebuild them in the next. Gothic is essentially a ritual. Like the Catholic Mass, its every detail contains a meaning patent to the initiated; it is a sacred story pantomimically presented for the edification of the faithful. "The fairy architecture, the glory of stained glass, the might of the bells, the sweet incense, the organ music, and the splendour of the altars and vestments, all contributed to the most marvellous of dramas—mediæval worship."†

* G. G. Coulton. *Social Life in Britain from the Conquest to the Reformation. Section XIII,* from which the quotations following are taken.

* E. S. Prior and A. Gardner. *Mediæval Figure-Sculpture in England.*

† W. R. Lethaby. *Architecture, p.* 210.

V.

Conclusion.

The whole problem resolves itself, as is usual in such discussions, into the everlasting antithesis of the Idea and its Expression—or, in the approved nomenclature of æstheticians, of content and form. In a true work of art, content and form are so completely merged that an attempt to differentiate them by analysis in effect destroys both. Whence possibly the only definition of Art is the Measure of Success of this merging, the precision with which an image is expressed. The differentiation of content and form is ultimately a misuse of the naturally objective and analytic tendencies of our reasons, and the chief value of the Crocean philosophy is to have proved this for us. But art must have an inspiration, and the course of centuries according to our evidence has changed the centre of artistic inspiration from content to form and given us æsthetic conceptions which once did not exist. The extreme modern view advances so far as to declare that the content of a work of art has no real importance ; sculpture and painting are to consist of pure design, a system of patterns, which ultimately should be equally expressive upside down ; their last and most depraved function is representation ; they are degraded if catalogued with titles. After the law and principle of music, which is pure and non-representational, the arts must strive, and, says Walter Pater, " one of the chief functions of æsthetic criticism, dealing with the products of art, new or old, is to estimate the degree in which each of those products approaches, in this sense, to musical law."* Compare this passage with one of Aristotle's on music, previously quoted. Yet by a strange irony the extremist of modern times idolises more and more the primitive and archaic, whose absence of pure design and pattern we have been at some pains to prove.

Art to the ancients was Life, and all that Life can mean. Works of art were not beautiful in themselves ; they were beautiful if they represented beautiful things. Beauty of form was the accidental and unconscious accompaniment of artistic creation. It was " what the Greeks would call '*επιγιγνόμενόν τι τέλος*,' words hard to translate, something between a by-product and a supervening perfection, a thing like—as Aristotle for once beautifully says of pleasure—' the bloom of youth to a healthy young body.' "† In this Essay we have endeavoured to examine what justification we have historically for the persistent belief that beauty can reside in a *design*, in a particular fold of drapery, the pose of a limb, the outline of a moulding or the juxtaposition of colours, instead of that beauty resides in the object itself for what it represents or fulfils—how far it were better to study a cathedral as a place of worship or as a lofty filing nave, and a crucifix as Christ on the Cross, with all that that can mean to a devout heart, or as the embodiment of certain rhythms, proportions and conformations of mass.

Art evidently is a value which is assumed by objects whose original purpose has been outgrown and forgotten. Nature becomes beautiful when the animism of primitive belief disappears. To-day we glorify the sunset æsthetically ; our fathers deified it and said their prayers to it. Likewise architecture, sculpture, and works of art generally become beautiful when they have lost religious prestige. In a more simple case, such a thing as military ceremonial is æsthetic in so far as it is useless in the circumstances of war, which originally caused it to be.

The problem of respective gain and loss to us in the æsthetic revolution is somewhat irrelevant to our argument. But the following observations may not be unnecessary.

We must ourselves be judges of the value of the æsthetic sensibility. If we have lost the faith—and, if you will, the superstitions—of our fathers, our lives have been enriched with a substitute, to whose enjoyment our own intimate experiences can bear witness. But the claim of the æsthetic sensibility to remain with us must be balanced with its modification of the unity and creative gifts of our aboriginal selves. We have found in recent centuries an inestimable treasure, but we have apparently lost the power of replenishing it. We now labour after *effects* ; we restlessly aspire to *character* and *originality*. The mediæval craftsman would have told us : " Seek ye first the kingdom of God, and these things shall be added unto you." In consequence of our opposition to the simple representative truth, which infuses ancient art, we wage a constant Battle of Styles and Standards of Taste. The history of French Impressionism would have been unimaginable in the days when a picture of Athena was Athena, and Zeus was Zeus, and nothing else. Moreover, by an insistence on design and form, our artists are in danger of speaking in a language not understood of the people, many of whom are primitives still and to whom ultimately will be given the right of judgment, even as they were in past ages of fertility and inspiration. The new æsthetic has made art a luxury and the artist a parasite ; he ignominiously apologises for his existence by expatiating on the " Necessity of Art."

There is a subtle irony in the modern attitude. It judges ancient art by æsthetic standards—and therefore by unintentioned standards. Equally must its own excellences be unintentioned and unrecognised by its creators. Renaissance art tried to be Roman, but unwittingly produced a spirit of its own, which we now recognise and extol. The Neo-Gothic tried

* Walter Pater. *The Renaissance. The School of Giorgione.*
† Jane Harrison. *Ancient Art and Ritual.*

to be Gothic and failed. Yet we are finding their works praiseworthy for other reasons than their Gothicism. Our most debased periods, perhaps, are entitled to some respect. Even Chantrey and Gibson might have enviable qualities, if only it was the sincerity of their work and no more. Canova, Thorvaldsen, and Flaxman have genuine admirers, but not because they were imitators of the Greeks. Modern designers are fanatical students of the archaic. But their works are not the better for it. If their works have merit it is because they unconsciously bear the stamp of their makers' personality and the age in which they live. Incidentally our finest products to-day are those that have not yet acquired the aristocratic status of Fine Art. There is a progressive school of critics who find æsthetic satisfaction in pure engineering structure, in motor-cars, aeroplanes, and the ordinary things of life. Their view may or may not be right—but it is more nearly the view of the ancients than any other. Is it that the æsthetic sensibility is a dangerous illusion? Were it not for its power to-day this conclusion would be pardonable. We are the heirs of the dilemma, that so soon does a workman become conscious of art, so soon does his work cease to be artistic.

If Art is History's picture-book wherein we may read the life-history of men, our modern æsthetic chaos would be the symptom of our modern spiritual and intellectual chaos. If fault there be with our arts—and many are agreed that they are not as resplendent as in the past—it is not in the loss of crafts, or in commercialism, which we habitually execrate. The fault is in ourselves. We have lost the primitive genius of olden time, and, study as we will, it shall not be reproduced by artists. A new cycle of culture, analogous to that which began its course in the first century of our era, in an æsthetic atmosphere we have seen to be similar to our own, could, and maybe will, recreate vital artistic traditions, which shall have a meaning and an appeal to men. Perhaps the æsthetic sensibility, as the final vibration of a moral nature, the old age of reverent memories, may yet be the promise of a resurrection.

We have in the course of this Essay studied the primitives and the ancients. We have established the extent of their æsthetic consciousness. We have indicated the purpose of their arts and the relation of their arts to life. We have established the complete revolution in the æsthetic consciousness of modern times. The conclusion is that Art, far from being the eternal necessity and birthright of human nature, is new to human nature; that to admire the arts of the past for their own sake rather than for their meanings has not the support of History; that it is not just to attribute to the ancients an æsthetic which it is not possible for them to have possessed; and finally that if we are to cure our artistic pessimism and again produce great architects, sculptors and painters, Art itself will be less of an aspiration, and Man once more will be considered worthy to be studied and represented.

The New Zealand Institute of Architects

ITS HISTORY AND DEVELOPMENT.

(A contribution sent by Mr. D. G. Johnston, Secretary of the New Zealand Institute of Architects.)

THE settlement of the British race in New Zealand, begun in earnest in the year 1840, covers little more than the span of a lifetime, but in that short space of time the Dominion has evolved from a few scattered whaling and missionary stations, firstly as a Crown Colony, then as a self-governing colony of several provincial councils, and finally as a strong self-governing Dominion of the British Empire with a population exceeding one million.

The early settler was concerned only in providing the most primitive dwellings and business premises. But those early buildings, in all their rudeness, often possessed a charm, simplicity and sense of fitness which made them more to be desired than some later and more pretentious erections. They were built usually of the material of the country and to fulfil the needs of the people. The earliest " Colonists' Guides " contained simple plans of two-roomed houses, and the military operations necessitated the provision of barracks and store buildings in addition to the houses for offices and government officials. In these buildings hewn and sawn timber, clay and wattle and daub with thatched and shingle roofs were the materials frequently in use. There was but little stone available, but in certain parts that was used, and bricks for chimneys were soon manufactured. In some cases wooden buildings were shipped out in sections from England and erected.

This period of primitive simplicity was followed by attempts at more pretentious buildings of wood, frequently adorned with fretwork, on which the whole ingenuity of the carpenter was exercised to obtain an obtrusive complexity and splendour of effect. Much of this was due to the introduction of books of meretricious designs from America. Most of the business premises, however, and some of the houses were designed with a degree of taste, frequently on classic lines, and were usually built of wood. Many of these were the work of the earlier architects.

With the rapid development of the Colony,following the period of the gold rushes, there came a demand for improved buildings, and a certain limited scope for architects. At first, members of the profession pursued a purely individual path, although the formation of various associations of architects commenced as early as the year 1880, when an association was formed in Auckland ; but a common ground of interest gradually developed in the necessity for standardising the conditions of contract. This was the main purpose of a conference called in Wellington in October 1905, when architects attended from Wellington, Auckland, Canterbury, Otago and Southland, all the important centres being thus represented. Mr. Wm. C. Chatfield, of Wellington, who had been a vigorous advocate of the organisation of the profession, was elected to the presidency, and it is pleasing to record that the veteran is still an active member of the New Zealand Institute of Architects.

It was explained by the chairman that the meeting was called to constitute a New Zealand Institute of Architects, so that the profession could be properly represented when meeting the builders of the Dominion to discuss modified conditions of contract. The proposal was unanimously adopted, and the Institute commenced its career with the following officers :— President : Mr. Wm. C. Chatfield (Wellington) ; Vice-presidents : Messrs. E. Bartley (Auckland), S. Hurst Seager (Christchurch), F. Penty (Wellington), F. W. Petre (Dunedin), and R. Marshall (Southland) ; Hon. Secretary : Mr. Wm. Crichton (Wellington) ; Hon. Treasurer : Mr. A. Atkins (Wellington) ; Members of Council: Messrs. Thos. Mahoney (Auckland), Wm. Turnbull (Wellington), J. Collins (Christchurch), J. L. Salmond (Dunedin), and Chas. H. Roberts (Southland). Subsequently the representatives of the Institute met the builders at Timaru and conditions of contract were framed. There was a satisfactory adjustment at the time, particularly from the point of view of the interests of the building owner, as represented by the architect, but the question of conditions persists to this day and has been the subject of very strong controversy at times.

In 1909 the Institute resolved to publish a Journal, and this was issued quarterly under the editorship of Messrs. R. F. Bacon, A.R.I.B.A., and C. F. B. Livesay. It was subsequently found more desirable to issue an annual volume of proceedings, which was compiled by the secretary, the late W. Beauchamp Platts. The literary side of the Institute's activities has since developed in a very satisfactory manner, a bi-monthly being published under the editorship of Mr. C. R. Ford for two issues, and then continued by Mr. F. E. Greenish, A.R.I.B.A., who still retains the position. In August 1912 the Institute was affiliated to the Royal Institute of British Architects and thus became an " Allied Society."

With the growing importance of the profession in a rapidly developing country, architects recognised that their organisation should possess some more definite standing than that provided by registration of the general character under the terms of the Incorporated Societies Act. The Government was approached, with

a request that an Act be passed conferring definite powers upon the New Zealand Institute of Architects. A deputation interviewed the Hon. W. F. Massey (Prime Minister) with this object in August 1912. It was introduced by the Hon. A. L. Herdman, then a member of the Cabinet, and was supported by Mr. Alfred Atkins, President of the Institute. The Prime Minister was completely sympathetic with the aims of the deputation and he undertook to bring in a measure as suggested.

On the circulation of the proposed Bill many objections were made, principally on behalf of local bodies, who considered that its provisions would render their engineers liable to prosecution if they designed any building. A separate association of architects in Wellington also submitted objections, and the Council of the Institute conferred with representatives of this Association. The result was an agreement on the principles of the measure, and a decision to amalgamate the Architects' Association with the New Zealand Institute. Thus the profession faced the position in united fashion. It was a wise move, for opposition to the proposed Bill was fairly extensive, owing to the great influence exercised in Parliament, not only by representatvies of local authorities but by the builders. The cry of " close corporation " was raised, but the answer to this was that Parliament had already given statutory recognition of a similar character to the Medical Association, the Dental Association, the Society of Accountants, the pharmacists and surveyors, while even the plumbers had been controlled under powers of a statute. The Bill was in charge of the Hon. A. L. Herdman, who proved himself an able advocate in face of strong opposition from some sections of Parliament. Important modifications were made in the measure, otherwise the strength of its opponents would have been overwhelming and the chance of statutory recognition would have been lost. The concessions made under strong compulsion caused disappointment to the profession, and it is still one of the objectives of the Institute that amendments to strengthen some clauses of the Act should be secured. A weakness of the New Zealand Institute of Architects' Act, which was passed in November 1913, is that no penalty is provided for a person who practises as an architect, so long as he does not represent himself to be a registered architect. The profession in New Zealand has only to trust to the discrimination of the public, who should realise that all competent architects are members of the New Zealand Institute.

The chief value of the New Zealand Institute of Architects' Act lies in the control which it gives over the qualifications of those who wish to enter the profession in New Zealand. Specific power is given in the statute for the Council of the Institute to make arrangements with the New Zealand University for the conduct of examinations for the degree of Batchelor of Architecture, and it is also obligatory that a Committee of Architectural Education be appointed annually to deal with the education of students in architecture, and to conduct (by examiners approved by the Council) such examinations as may be required by the regulations of the Institute. No person can now secure admission to the Institute unless he has qualified by examination, either of the N.Z. Institute or of the R.I.B.A. In the latter connection it is interesting to note that a large number of New Zealand's practising architects have been trained in England or have visited England for the purpose of study and qualification.

Provision was made in the Act for the registration of architects, the principal clause authorising the registration of all those who had, for three years prior to the passing of the Act, been *bona fide* engaged as principals in the practice of architecture in New Zealand. Power was also given to include, in due course, those who at the time of the passing of the Act were studying for the profession. The administration of this section was left to the discretion of the Council of the New Zealand Institute. The first annual report after the completion of registration under the Act showed that the roll comprised the following :— Fellows, 135 ; Associates, 179 : totalling 315 members. The present position of the membership is as follows:— Fellows, 114; Associates, 239 : a total of 353 members.

A tremendous amount of pioneer work has had to be done to bring the Institute to its present condition of efficiency, and it is quite impossible adequately to recognise, within the space limits of one article, the great personal services rendered in this way. The late Mr. W. Beauchamp Platts, the first General Secretary, served the organisation with efficiency and enthusiasm for twelve years, until his death, when his place was taken by Mr. D. G. Johnston. The Honorary Secretaries of the Institute have been Messrs. Wm. Crichton, R. F. Bacon, Alfred Atkins, and the present Hon. Secretary is Mr. W. Gray Young. The successive Presidents have contributed their full quota to the work of organisation and development. Their names are as follows :—1905-6, Wm. C. Chatfield ; 1906-7, Wm. C. Chatfield ; 1907-8, F. W. Petre (deceased) ; 1908-9, Thomas Mahoney (deceased) ; 1908-10, C. J. Mountfort (deceased) ; 1910-11, C. J. Brodrick ; 1911-12, Alfred Atkins (deceased) ; 1912-13, P. Y. Wales ; 1913-14, P. Y. Wales ; 1914-15, Wm. C. Chatfield ; 1915-16, W. A. Cumming ; 1916-17, W. A. P. Clarkson (deceased) ; 1917-18, C. A. Lawrence ; 1918-19, J. Louis Salmond ; 1919-20, J. Louis Salmond ; 1920-21, C. Reginald Ford ; 1921-22, C. Reginald Ford ; 1922-23, Wm. Crichton ; 1923-24, W. M. Page.

The governing body of the Institute is a Council, to which delegates from each district are elected annually by postal vote of all members resident therein. The Council meets annually at each of the various centres in rotation. At these gatherings the Annual Meeting of the retiring Council is held on the first day, and on the succeeding days the Annual General Meeting of the members of the Institute and the First Meeting of the newly elected Council take place. The Council is called together in the interval at such times as occasion may warrant, but the executive functions are meanwhile exercised by an Executive Committee, composed of the Wellington members of the Council meeting in the capital.

The detail work of the Institute is carried out by numerous standing committees, established to deal with the following :—Architectural Education, Legislation, Finance, Practice and Discipline, Materials, and from time to time such Special Committees as are needful.

In order that close touch may be kept with individual members, seven District Branches are established with headquarters in the chief centres. Each of these branches has its own local organisation and can deal with matters affecting the purely local interests of its members, but is subordinate to the Council on matters of Dominion interest, to secure uniformity of policy.

The Institute is gradually developing its powers. Its Scale of Charges is fairly generally accepted. It is now very frequently consulted in connection with Architectural Competitions and has in many instances secured the acceptance of its Regulations for their proper conduct, and the non-recognition of these has often had dire results. The Code of Ethics under its regulations has assisted in establishing an improved tone in the general practice of the profession.

Housing and town planning have been prominent questions and the Institute took a leading part in a national conference called by the Government of New Zealand a few years ago to consider various aspects of town planning, with a view to legislation. A measure, which represented a fair compromise between conflicting interests without sacrificing too much in the way of ideals, was prepared and introduced into Parliament, but there have always been other questions more pressing for the politicians of the day, and, so far, town planning has not been the subject of a comprehensive measure, although a few useful provisions have been included in amendments of the Municipal Corporation Act. New Zealand, as a developing country, offers many examples of the necessities for long vision in town planning and city planning, and it already provides much evidence of the waste and inconvenience due to failure of former civic administrators to take thought of the future. Thus the field is wide open for the town planner, and the New Zealand Institute of Architects is not neglecting its obligations in this respect. Town planning organisations, some years ago, showed considerable vigour, but in the face of official indifference they have been discouraged out of existence, and the New Zealand Institute of Architects is one of the few bodies which have of recent years kept the subject prominently before the community. Further steps are now being taken in conjunction with the Civil Engineering and Surveying Professions to obtain better recognition of the needs in this direction.

The movement to improve the status and training of the student of architecture in New Zealand began in most centres and in the capital in 1909, when a Students' Association was formed, and competitions were held. Somewhat later, students were accepted for registration as students of the Institute. Some of them are now practising members of the Institute.

The passing of the N.Z. Institute of Architects' Act of 1913 involved, as previously indicated, the setting up of a qualifying examination for membership, and the first examination under the syllabus took place in 1918. The Examinations, however, did not come into general application immediately, as owing to the lack of facilities and loss of time and study through the war service of many students, it was deemed advisable to exempt some of the candidates for a certain period, a concession involving an amendment of the Act. The preliminary examination was not fully enforced until December 1921, as many students who had commenced professional studies had not, during their school period, passed the Matriculation examination, the qualification required in the way of general education. It was found that the original syllabus was insufficiently detailed, and hardly of an adequate standard, therefore an amended syllabus was submitted to the annual meeting of 1921. This was approved, subject to the incorporation of several suggestions made by Mr. W. H. Gummer, in a paper on Architectural Education. The syllabus was thus remodelled, and in lieu of the Intermediate and Final examinations there were substituted the First and Second professional and Final examinations, the three examinations permitting the student to make a better distribution of his efforts. More drawings and testimonies of studies were required. Since the introduction of the new syllabus, rapid progress has been made, the standard of work has much improved, and the educational value of the tests has been clearly demonstrated.

To provide greater facilities for these examinations, the work of the various Students' Associations was co-ordinated under the guidance of a sub-committee appointed by the Institute Committee of Architectural Education, one of the features being a system of competitions, synchronised throughout the various

centres. There are active Students' Associations in Auckland, Hawke's Bay, Wellington, Canterbury and Otago, and a great stimulus to the spread of architectural knowledge has been the result. Much, however, remains to be done to gain adequate facilities for complete and sound architectural training in New Zealand's many scattered centres.

The Institute now has under consideration the question of University Training, and a project is on foot to establish a Chair of Architecture at one of the Colleges of the N.Z. University, and to co-ordinate its examination system with that of the University.

The New Zealand architects and students have a fine record in connection with the European War. Reference to this subject at the Institute's annual meeting in 1917 showed that fifteen Fellows and fifty-seven Associates had volunteered for active service, representing twenty-two per cent. of all the membership, exclusive of many students, and that four had won military distinctions on active service. New Zealand's Roll of Honour of the Great War contains several names of Institute members.

Reviews

SHEFFIELD. *A Civic Survey, and Suggestions towards a Development Plan. Report by Patrick Abercrombie, in collaboration with R. H. Mattocks.* [*The University Press of Liverpool, Ltd. Hodder & Stoughton, Ltd., London.* 1924.]

THE DEESIDE REGIONAL PLANNING SCHEME. *By Patrick Abercrombie, Sydney Kelly and Theodore Fyfe.* [*The University Press of Liverpool, Ltd. Hodder & Stoughton, Ltd., London.* 1923.]

STRATFORD-UPON-AVON. *Report on Future Development. By Patrick Abercrombie and Lascelles Abercrombie.* [*The University Press of Liverpool, Ltd. Hodder & Stoughton, Ltd., London.* 1923.]

All Town Planners owe a debt of gratitude to Professor Patrick Abercrombie and his collaborators for the sterling work they have done in the preparation of regional reports. First we had that on Doncaster, which set up a standard difficult to improve on, and now we have to notice three more, each in its way no less informing, and invaluable to those on whom will devolve the duty of guiding the future destinies of these areas.

The three reports before us differ greatly in character, one dealing with a great manufacturing town, the next with nearly half a county, mainly agricultural in character, but with definite industrial possibilities, and the third with a small country town unique in its importance as a place of pilgrimage to all people of our race and language.

Needless to say, the approach in each case is on different lines, and herein lies the interest of being able to compare the three. Those on Sheffield and Deeside open with an historical outline, without which the key to much that follows would be lacking, but in the case of Stratford-on-Avon the past so dominates the present that no specific study on these lines is needed, and the main substance of the report is devoted to the preservation of the town as an illustration of how it can maintain its characteristic quality without proving to the disadvantage of its inhabitants, who have, after all, to carry on their work and gain a living not solely by supplying the wants of those who come to do homage to Shakespeare. The exposition of this view by Professor Abercrombie and his gifted brother steers a most judicious course between the extremes that might be credited to the archæologist and the rationalist, and reconciles most skilfully the valid claims of both. They deprecate any attempt at putting back the clock and reproducing seventeenth-century Stratford, while they are most insistent that nothing should be introduced that might conflict with the amenity and harmony that still, in the main, characterise the town and its surroundings. Every factor that may be employed in preserving these is carefully noted, and we have only been able to find one instance where it may be suggested that they might have carried their programme a little further. The present town lies within lines already defined of the river on the East, the canal on the North, and the railway on the West and South. Might it not be advantageous to form somewhere near these boundaries an encircling tree-planted promenade of modest dimensions so as to mark off future extensions, more particularly those of an industrial character, for which an appropriate location is suggested towards the north-west ?

We must, however, leave this pleasant book with its attractive illustrations and turn to that embodying the comprehensive studies of Sheffield, studies which have been carried further than any hitherto published in this form.

This report deals in Part I with the survey of existing conditions, and in Part II with the proposals for future developments. Beginning with topographical studies and following up these with the story of the city's establishment and growth as an industrial centre, the survey continues by examining in greater detail the reasons why it takes its present form.

The position of the industrial quarters, the lines of communication, density of population, housing conditions, health and open spaces come in turn under review. The statistical diagrams, maps and views are all remarkably good, though it was not practicable to include all that have been prepared ; and at the end the author urges that these studies should be carried still further, feeling, as most must feel who have been

so engaged, that the Civic Survey must be a continuous process, always finding new aspects for investigation and revising those already dealt with in order to keep them up to date.

Part II., giving the Development Plan, is even more illuminating as an exposition of methods and their graphic treatment. Opening with the zoning proposals, it devotes the succeeding chapters to Roads, Grouping of Population, Central Improvements and the Park System, following these with shorter chapters on Neighbourhood Centres and Satellite Suburbs, Suburban Growth, Intellectual and Artistic Centres, Water Transport, Railways and the Town Planning Schemes. This bare recital will indicate the wide extent of the ground covered, but not the logical and concise manner in which the conclusions arrived at are set forth.

The most cursory inspection of the report on Deeside must convince us that in few districts could there be a greater need for a Regional Planning Scheme. Industries and housing are both likely to expand their demands, while there are large agricultural interests to be studied also.

Here we have an area rich in coal and other minerals close to an estuary capable of being organised on an extensive scale, but neither of them exploited so far to a degree comparable with future possibilities. Docks, quays, road and rail are all inadequate ; it is therefore of the highest importance that these should be considered comprehensively, as otherwise haphazard developments would be inevitable.

The mineral resources being the key to the position, these naturally take first place in this investigation, but not without co-ordination between the economic demands and those of health, amenity and the historic character of the district, leading up to an outline of the proposals for zoning, Next we find the proposals for communications by road, rail and water, matters of especial importance in view of the undeveloped state of the area relatively to what may be anticipated. The road scheme looks admirable, but as regards the railways one gets the impression that the authors of the report might have done better to prepare a coherent scheme of their own rather than to have limited themselves to a review of the proposals already put forward, which seem to be in some degree alternative and competitive.

The development of the estuary itself is mainly a matter of reclamation and dock schemes. The general principles are indicated, but the details would obviously demand further data than could be obtained for a report of this tentative nature.

Finally, there are some brief but illuminating studies on Chester, Flint and the other towns included in the region, glancing back at the past, and also indicating their functional position in the programme sketched out. The whole, though necessarily an outline to be filled in as time and activities dictate, sets out most admirably the main factors which should guide development, and is of great interest as illustrating the desirability of preparing regional schemes.

H. V. Lanchester [*F.*].

EARLY ARCHITECTURE IN WESTERN ASIA.

An Historical Outline by Edward Bell, M.A., F.S.A. Bell & Sons.

The human-headed bulls from Sargon's palace at Khorsabad, the winged lions from Nimrud, and the wonderful slabs representing the royal lion hunt from Nineveh will always have an attraction for visitors to the British Museum. It is now many years since Layard's discoveries astonished the archæological world and Rawlinson deciphered the cuneiform inscriptions. But such examples belong to the beginnings of modern civilisation and are practically contemporary with the first Greek Olympiad. Sayce added much to our knowledge in his *Races of the Old Testament*, published in 1891. But recent excavations and investigation tell us more. The head of the Persian Gulf appears to have been inhabited by Sumerians, claimed to be a non-Semitic people from the region of the Caspian Sea, their chief town being Nippur, and they left their mark on all succeeding civilisations. There are examples of Sumerian sculpture that belong to the fourth millennium. Somewhere about this time a fusion is claimed to have taken place with the Semitic communities of Akkad in the north, and a Semitic dynasty supervened, connected with the legendary name of Sargon, about the year 2650 B.C. It was, however, of short duration, and the Sumerians regained their independence.

The name of Gudea here makes itself prominent. Sculptural representations of this ruler exist, together with much information as to his doings recorded upon clay cylinders. He built a temple, in which the lion and the bull are noticeable features. From Lagash, his capital, prosperity passed upon his death to the city of Ur, which ultimately surrendered to its western neighbours, the Elamites, and thenceforth the Sumerian sovereignty ceased to exist. The years were now uneventful until an invasion of Amorites from the desert established the kingdom of Babylon, which was to remain representative of the East until the conquest of Cyrus, which brings us into classic times.

It is now that the Hittites come upon the scene. They have been rendered familar by references in the Old Testament. Ezekiel tells us that the mother of Jerusalem was a Hittite. Canaan, too, begat Zidon and Heth (or the Hittites). They made a raid upon Babylon from their stronghold of Boghaz-Keui, south of the Black Sea, in the 18th century B.C., and

exercised an increasing dominance, not only in Babylonia, but throughout Asia Minor generally. The Assyrian king Tiglath Pileser stayed their power (c. 1110), and under further defeats by successive kings they disappear from history.

But it is evident that their civilisation affected architecture in no small degree. The remains at Boghaz-Keui, which include the palace of Hattusil II (c. 1270 B.C.), are of great interest. They built of stone in contrast to the mud brick of the Euphrates Valley. The familiar lion guards the portals, the remains of which clearly indicate the egg-shaped arch associated with Ctesiphon. It has been suggested that wooden columns formed part of the scheme, and an Assyrian record exists acknowledging the indebtedness of their builders to Hittite enterprise. The widely extended influence of this people appears in the sculptured slabs from Singerli, situated in the bend of coast between Antioch and Tarsus, attributed to the 15th century B.C. Here we have the same vivid treatment that is so attractive in the hunting scenes from Nineveh, while their expression rests rather upon the *naïveté* of their conception than upon a conventional decorative display. The faces are beardless, as in Sumerian sculpture. The figure of a warrior from the King's Gate at Boghaz-Keui is a striking example of this freedom of manner, and supports the author's suggestion that Greek sculpture was indebted to the expansion of civilisation through Asia Minor rather than to Minoan sources.

Ethnography is still a much debated science, language and types being so often at variance. The distinctions of dolichocephalic and brachycephalic, so much relied upon, are not universally accepted as conclusive evidence of race. More attention is being paid to facial formation, and it may well be that the Garden of Eden will again come into its own.

As matters stand at present, however, this book represents a most readable summary of events and their influence upon architectural development from the earliest times until the era of Persian supremacy.

C. J. Tait [*F.*].

THE LAW RELATING TO BUILDING AND BUILDING CONTRACTS. *By W. T. Creswell, of Grays Inn and South Eastern Circuit, Barrister-at-Law, Licentiate R.I.B.A., etc. London*, 1924. *Price 7s. 6d.* (*Sir Isaac Pitman & Sons.*)

Mr. Creswell is known as a writer on legal subjects, and to the architectural profession particularly, by his articles in *The Builder* on the subject of building contracts. A book amplifying these articles is sure of a welcome by architects, probably because in these post-war days matters of contract seem to touch the architectural profession more closely than they used to do.

The same may be said of statutes relating to building and also of the subject of arbitration, and it is significant that, though these matters are subjects in examination curricula, no great facilities are given in some of our schools for teaching them to the students.

In 1913 Master Ball, of the King's Bench Division, wrote a work on the Institute form of contract (published by *The Local Government Journal*) with suggested alterations and amendments to meet particular cases, which was well received both by architects and contractors, probably because it differentiated so well between the lump sum as distinct from the quantity form of contract and also gave a useful form of sub-contract.

The advent of the Ministry of Health forms of contract, though found extremely deficient in many cases, has had one great beneficial effect in making all interested parties realise that the Institute form, whatever its shortcomings may be, is to-day the most practical and simple form for everyday purposes.

The sphere of Mr. Creswell's book is a limited one and is directed to the assistance of those who do not profess to be lawyers ; but it is so exhaustively indexed that its sphere may become wider than the author intends.

Master Ball, in his work, presumes a certain knowledge in his reader of the elements of a contract, and these may not be altogether simple. The work under review has the advantage that nothing is presumed and the reader is taken pleasantly through introductory definitions which give a solid foundation whereupon to build the more complicated structure, the turrets and finials, as it were, of fine points of law or procedure.

The position in contracts with corporations is fully dealt with and quotes the most recent decisions under the Public Health and Working Classes Acts.

Probably the most interesting chapter is No. 10, which deals with penalties and liquidated damages, differentiating between the two and illustrating the fine division line which has to be observed.

The book is one which will be well received by all interested in building matters, and is so simply written that students will find it a useful *vade mecum*.

W. E. Watson [*F.*].

ARCHITECTS' BENEVOLENT SOCIETY.

Scheme of Insurance.

In view of the interest shown by architects in the Scheme of Insurance, the Council of the Architects' Benevolent Society have recently secured the help of an advisory committee of insurance specialists.

The Architects' Benevolent Society is now in a position to answer enquiries on every class of insurance business, whether concerning existing or contemplated policies, and is ready to give considered advice on all such questions.

St. Paul's Cathedral

EXPERT COMMITTEE'S FINAL REPORT

THE Representative Committee for the Preservation of St. Paul's Cathedral met on the 16th February at St. Paul's and received the report of the expert advisers.

The Dean of St. Paul's presided. There were also present Canon Newbolt, Canon Alexander, Canon Simpson, the Archdeacon of London, the Bishop of London, the Lord Mayor, the expert advisers (except Sir Aston Webb, who was prevented by illness from attending), Sir Charles Morgan, representing the Institution of Civil Engineers, Sir Lewis Dibdin, representing the Ecclesiastical Commissioners, Mr. C. S. Peach, representing the Royal Institute of British Architects, and Mr. H. T. A. Dashwood, Chapter Clerk.

The Archbishop of Canterbury was unable to attend through illness.

It was proposed by the Dean, seconded by the Bishop of London, and agreed, that the terms of reference of the Committee should be :—

To consider the question of the right course to follow in the works necessary for securing the stability of the Cathedral fabric, and to administer the funds which have been, or may be, collected for the purpose of those works.

Steps are being taken to complete the Committee by co-opting four men of public standing.

Mr. Dashwood was appointed secretary to the Committee.

TEXT OF THE REPORT.

19, Queen Anne's Gate, Westminster, London, S.W.
14 February 1925.

To the Very Reverend the Dean and Chapter of St. Paul's.

ST. PAUL'S CATHEDRAL.

Gentlemen,—Your Commission, in pursuance of the reference to them in October 1921, "to examine the building and to advise what methods should be adopted for its preservation," now submit their report giving the result of their investigations into the condition of the Cathedral, together with an account of the observations that have been made and reasons for the conclusions arrived at, and for the recommendations made.

Your Commission held its first meeting on 28 October, 1921, when it was unanimously agreed that the chair should be taken by Sir Aston Webb, K.C.V.O., P.R.A., F.R.I.B.A. About 50 meetings have been held, and individual members of the Commission have, in addition, paid many visits to the Cathedral to inspect work in progress or to render themselves familiar with particular aspects of the problem under review.

Your Commission's investigations up to the present have been mainly directed to the condition of the structure under and composing the great dome. The surveyor to the fabric, Mr. Mervyn Macartney, F.R.I.B.A., placed before the Commission, of which he is a member, all the available data in the shape of drawings and reports made in the past, which were carefully examined and perused. It then became clear to your Commission that there was an absence of precise data as to the condition of the dome structure, and also an absence of accurate levels and measurements from which it would have been possible to ascertain definitely what movements, if any, had been taking place in the structure. As a consequence, a great deal of the valuable investigations made by previous commissions could not be utilized fully owing to the lack of a reliable datum system for comparison.

One exception to this was the installation of plugs inserted, under advice given prior to 1914, at each side of cracks throughout the fabric of the Cathedral. These plugs were designed to carry micrometer gauges from which variations in the cracks in three dimensions could be ascertained. Observations with these gauges had been made and recorded between the years 1914 and 1920, though unfortunately not continuously.

At an early stage of your Commission's investigations it was apparent that there were visual signs of damage in the masonry of the dome supports, in the buttresses and elsewhere, and that settlements that had occurred during construction had been corrected by levelling up course of masonry. They, therefore ordered a thorough examination and survey of the dome structure to be made and recorded. This was done at the end of 1921 and during the first three months of 1922. The immediate conclusion arrived at from this examination was that settlements of a regular and irregular character had occurred in the past, mainly ascribable to compression of the ground, but there was a complete absence of evidence that any settlements in the foundations were taking place, or in fact had taken place during recent years. This conclusion is formulated in your Commission's first interim report of June 1, 1922.

Although no evidence of recent movement in the foundations existed, it was felt that, if settlement was not taking place, positive evidence to that effect was essential. With this object in view, and also to provide a reliable basis for comparative measurements of other movements in the Cathedral, your Commission directed that a system of reference points permanently embedded in the masonry of the Cathedral should be installed, whereby levels and measurements could be observed by means of precision instruments and recorded for future comparison. The installation of this system was effected during the latter half of 1922, and since then three complete series of observations and measurements have been made at approximately six months' intervals.

The investigations of your Commission may be divided broadly as follows : the integrity of the foundations ; the movements of the dome structure ; and the stresses in the masonry of the dome and its supports.

A portion of the preliminary examination ordered by your Commission was the taking of levels on various masonry courses at different heights in the Cathedral—namely, on the impost in the crypt, the plinth of the church floor, the plinth of the main cornice, the Attic cornice itself, the benches in the whispering gallery, and masonry beds in the stone gallery and the lantern. These

levels showed that there is a departure from the horizontal of these courses, intended to be built horizontally, which becomes progressively less from stage to stage until at the lantern it is negligible. Similar indications were found as the result of plumbing the dome structure from the top of the lantern.

The testimony of these observations, which in your Commission's judgment is important, is that the settlement took place during the progress of the construction, and was irregular, in consequence of the lack of uniformity in the subsoil both as regards its strata and its previous compression under old St. Paul's. This settlement produced a tilt of the structure towards the south-west, which became more pronounced as more and more weight was placed on the foundations. In addition to the evidence of the rectification of levels mentioned in the previous paragraph there is further evidence, such as the insertion of compensating courses, that the effect of this settlement was corrected at the completion of each important stage in the construction—such as the main cornice, the stone gallery, and the parapets adjoining the external drum. In short, the greater part of the tilting observable to-day occurred during construction and was rectified from stage to stage ; the true measure of the subsidence and tilting that has taken place since the completion of the building is the deviation of the base and axis of the lantern from the horizontal and the vertical respectively, and there is no such deviation.

For an accurate system of levelling it was necessary that a permanent bench mark or reference point away from and uninfluenced by possible movements of the ground near the Cathedral should be available, and by the courtesy of the Post Office authorities this bench mark has been established on a disused cast-iron shaft penetrating into the London clay near the General Post Office. About 150 gunmetal sockets, specially designed to take hardened steel plugs for supporting levelling staves, have been inserted in appropriate positions in the masonry of the Cathedral. By this means direct comparison is always possible between one series of levelling and another.

Throughout the series of careful observations taken during 1923 and 1924 no relative settlement between the piers and other portions of the Cathedral fabric have been observed. It can, therefore, be stated with confidence that no settlements of the foundations are taking place at the present time.

Your Commission recommend that this levelling and plumbing should be repeated, completely or partly as circumstances may direct, at suitable intervals of time, so that the inception of any general or relative settlement of the foundations may be detected as soon as possible. They are of opinion that an appropriate time for the next complete series would be in the early spring of this year. Your Commission further recommend that, as in the past, a very jealous eye should be kept on all building operations in the vicinity of the Cathedral, which might alter the condition of the subsoil, with disastrous results.

The observations of the micrometer gauges recorded between the years 1914 and 1920 on the cracks in the drums supporting the dome indicated that an annual opening and closing of the cracks with a seasonal sequence, as well as a slow but definite steady increase in the width of each crack, was taking place. The opening and closing would indicate respectively an annual contraction and expansion of the masonry of the drums due to temperature changes and the increase a slow and progressive horizontal increase in circumference of the whole dome structure.

Careful measurements of the diameters of the drums made in the spring of 1922 reveal a distortion of shape consistent with a gradual increase of circumference, and the shape of the structure at the whispering gallery level showed distinct deviations from a true circle, with definite bulges over the north, south, east, and west great arches. Part of this deviation may be due to the effects of settlement during construction, but most of it, especially the bulges over the arches, is due to the cumulative effect of temperature changes. The north and south diameter was $6\frac{1}{4}$ inches greater than that from the east-north-east to west-south-west, and it may be reasonably inferred from this and the general shape of the whispering gallery that the expansion between the north and south has been greater than that between east and west, the movement having been towards the south.

The levelling sockets, 24 in number, embedded in the masonry of the whispering gallery, also carry reference points, between which precision measurements of 12 diameters across the inner drum have been made by an Invar tape under constant tension. These measurements confirm the distortion of shape previously noticed ; these 12 diameters are prolonged at each end across the corridor surrounding the whispering gallery by measurements between reference plugs embedded in the masonry of the corridor.

The precision measurements reveal that there is a periodic alteration in the length of the drum diameters, and the evidence is that the main temperature change is an annual one, the structure tending to resume the same shape at the same time of the year. There is insufficient evidence as yet to ascribe a value to the cumulative effect or progressive increase. The dimensions of these movements are roughly as follows :—Alteration of diameter of whispering gallery, ·005 ft. (say 1-16th in.) at a maximum point ; alteration in the distance across the corridor between inner and outer drums, ·001 ft. (say 1-80th in.).

In connection with the scheme of measurements, clamps for securing plumb wires have been embedded in the masonry at the top of the cone, in the keystones of each of the four open great arches, and in the main cornice at the top of each pier. Observations with the precision plumb-bob suspended from these points have indicated the following movements :—The top of the cone moves backwards and forwards under temperature changes, the range of movement being about ·01 ft., or say $\frac{1}{2}$ inch. The period seems to be an annual one. The keystones of the great arches move in sympathy with the alterations in diameter of the whispering gallery, but not to the same extent. The piers have a slight annual oscillation, but the movement is very small.

As a reference basis for the linear measurements and plumbing, gun-metal plugs have been embedded in the masonry of the bastions at church floor level, from which measurements are made by an Invar tape to the intersection of two lines engraved on the brass plate at the centre of the church floor.

The reference points for linear measurement and the plumb-wires have been co-ordinated with the centre of the church floor by observation with theodolites, by which means not only the amounts, but also the direction, of the differences found between series of observations can be ascertained and recorded.

To sum up the results of the observations just described, the weight of evidence points to a periodic alteration in the shape of the fabric, undoubtedly due to the effects of temperature changes, but it is difficult to form an accurate quantitative estimate of this alteration, as its magnitude is of the same order as that of the accuracy of the apparatus employed. The periodic alteration in shape due to temperature changes is a natural one, and any attempt to restrain it would either be abortive, or, if partially successful in any part, would be liable to bring dangerous stresses upon some other portion of the fabric. The case is quite different, however, as regards the cumulative effect or progressive increase ; evidence exists that such an increase is taking place, and steps should be taken to arrest it.

Your Commission, therefore, recommend that in order to eliminate or minimise any progressive increase, systems of metal hooping, one encircling the inner drum and another the peristyle or outer drum, at about the whispering gallery level should be provided.

Turning now to the weight of the dome structure as a whole, your Commission agree with and have adopted the calculations of Mr. J. D. Drower, F.S.I., made in January 1914, and August 1921. The total weight of the dome, its drum and peristyle, the buttresses surrounding it, the eight piers supporting it, and the eight great arches, together with those portions of the walls and vaults of the choir, nave, transepts, and aisles carried by the piers and bastions, may be summarised as follows :—

	Tons
(1) Total from top of cross to top of keys of great arches	23,098
From top of keys of great arches to top of plinth, 4 feet 2 inches above church floor level	28,116
(2) Total from top of cross to church floor plinth	51,214
From church floor plinth to underside of foundations	16,056
(3) Total weight upon earth ascribable to the weight of the dome and its supports ..	67,270

The portion of the dome structure above the attic cornice consists as to its lower part of two circular walls or drums resting on the piers and bastions and the arches between them. The inner wall is a truncated cone with a batter of 1 in 12, an internal diameter at the base of about 112 feet, and a total height of a little over 90 feet from the top of the main arches to the passage around the base of the dome. The top of this inner drum forms the support of the interior dome and the brick cone which carries the lantern and the outer dome. The outer drum is cylindrical, with an outside diameter of nearly 140 feet, a height of about 39 feet to the base of the peristyle columns, and an additional height to the top of the stone gallery parapet of about 54 feet. There is a distance of a little over 6 feet between the drums at the level of the tops of the main arches, and they are joined by 32 radial cross walls, which are continued outside the outer drum in the form of buttresses.

There is little doubt that the weight of the drum comprising the peristyle and that of the inner drum with its top burden act independently, as, owing to the cracks in the 32 radial walls between the two drums, there is practically no physical connection between them. The cracks in these radial walls appear to be due to cumulative temperature stresses rather than to unequal settlement, as there is no vertical displacement relatively in these walls at their base.

The shattered condition of the masonry of some of the 32 buttresses placed around the outer periphery of the peristyle has been noted in many previous reports on the safety of the Cathedral. These buttresses do not play an important part in transmitting weight to the bastions, nor, in your Commission's judgment, is it desirable that they should.

The combined load of the dome structure is carried by the piers and the bastions, but the independence of action above alluded to is responsible for a certain concentration of loading on the inner drum. The problem as to what is the distribution of weight between the piers and bastions is one which, in the judgment of your Commission, does not in the present condition of the structure admit of an accurate solution. The design is such that the greater part of the weight of the dome structure is carried by the piers.

Suggestions have been made from time to time that more weight should be spread over the large area of masonry composing the bastions. In the opinion of your Commission, this transference of weight would be undesirable. The Cathedral is partly founded upon ground consolidated by Old St. Paul's ; the amount and extent of this consolidation is a matter of conjecture. The evidence is that considerable settlement took place during construction, but that a state of equilibrium has now been reached. Any considerable change in the disposition of loading would undoubtedly upset the balance and be productive of further settlement.

With the exception of the radial walls between the inner and outer drums, which have already been mentioned, the masonry above the level of the keystones of the great arches appears to be in sound condition, and there is every reason to suppose that the " great chain " round the base of the cone is still efficiently fulfilling its task.

A careful examination was made of the masonry composing the great arches, and on the whole it is in good condition, such cracks and fissures as were apparent being recorded on drawings left in the custody of the Surveyor to the Fabric. For reasons that will be given immediately your Commission do not consider that these cracks jeopardise the integrity of the dome structure.

Reference has been made to the concentration of loading on the inner drum, but your Commission hold the view that natural internal arch action in the lower part of the inner drum below the great windows about 40 feet in depth has the effect of transmitting the weight borne by the piers directly to them without making great demands upon the ribs of the main arches themselves.

In the judgment of your Commission, the horizontal plane of loading, that is the ruling one, and therefore most

necessary to consider, is that passing through the springing of the main arches. Statements have been put forward that the stress on the most highly-loaded portion of this plane is about 50 tons to the square foot, but with these statements your Commission do not in any way agree, as such a condition of loading must assume that the whole of the weight of the inner dome structure, amounting to about 14,000 tons, is completely carried on the front ribs of the main arches and transmitted solely by those ribs to a very small area at the inner ends of the tops of the piers.

The assumption in the preceding paragraph makes no allowance for the arching effect previously mentioned, nor for any part of the weight of the inner structure of the dome reaching behind the front ribs of the main arches and being transmitted to the bastions. An estimate of the distribution of the weight can only be a matter of opinion and judgment, but it is not over-stating the case to say that the stress intensity of 50 tons per square foot alluded to above is reduced to one-half this amount, or less, if due allowance be made for the increased area of the pier at the ruling plane which would be brought into action in consequence of the above considerations.

It is to be noted that sample 8 inch cubes of Portland stone from the Cathedral, tested at the National Physical Laboratory, did not crack until subjected to a load of 400 tons per square foot, and crushed under loads of from 430 to 490 tons per square foot.

A careful examination was made of the condition of the masonry composing the eight main piers supporting the drums and dome. These piers consist of an outer skin of Portland stone ashlar set in lime mortar. The ashlar is worked in conformity with the architectural features of these piers, but the breadth on the bed varies considerably. The interior of the piers is uncoursed rubble masonry of many kinds of stone bedded in the same kind of mortar. This mortar, which for its effective setting requires to be exposed to the atmosphere, has not properly consolidated in the interior, owing doubtless to the fact that, the piers being of considerable thickness, the atmosphere has been excluded from the interior by the hardening of the mortar in the joints of the ashlar casing.

The ashlar masonry is worked so as to show close joints on the face, which in many instances has resulted in the spalling or flaking of the edge of the stone, owing to a concentration of pressure at these places. At the level of the church floor plinth the load of 51,214 tons has been estimated by Mr. Drower to be carried as to 37,984 tons by the eight piers, and as to 13,230 tons by the four bastions. On this assumption the loading of piers at this plane is about 15 tons to a square foot averaged over their area.

In the crypt the load on each pier is greater, but the area of the piers is also greater, and the incidence of the load more favourable. It is probable, therefore, that the maximum intensity of stress at this portion of the structure does not reach so high a figure as at the church floor plinth. Under the footings the load on the earth has been calculated by Mr. Drower to be just over five tons per square foot under the piers.

The main question during these necessary investigations, to which your Commission has given much anxious consideration, after ascertaining the actual facts as existing at present, is the stability of the eight piers carrying the dome, and how far their structure, as previously described, is, or could be made, capable of resisting the pressure to which they are subjected.

Schemes for entirely rebuilding the piers have had most careful consideration, but to replace the existing piers with others, without taking down the dome, would entail transferring the load on to temporary supports. This operation, in the opinion of your Commission, would be attended by the very gravest risk, and they have arrived at the definite conclusion that any attempt to rebuild the piers would inevitably affect the foundations, at present stable, and the results would be disastrous.

The fact that no movement has been observed in recent years in the foundations led your Commission to make a large number of experiments with various forms of grouting with a view to ascertaining whether the piers could be satisfactorily consolidated by this method, which is on somewhat similar lines to that recommended by Sir Francis Fox some years ago. Beginning in the crypt, a number of bore-holes were drilled through the pier. From these bore-holes cores were removed which gave clear information as to the material of which the piers were built and the extent of any cavities which exist.

This investigation showed that the construction of the piers in the crypt was, on the whole, satisfactory. After thorough washing out, these bore-holes were grouted by the cementation process, using very dilute grout. A subsequent investigation of the interior of the piers showed that the grouting had successfully filled the small cavities existing. It was, however, found that some of the face stones had been embedded in plaster of Paris, and the washing out under pressure had, unfortunately, had a very deleterious effect on this plaster. Similar experiments were carried out in one of the piers above the church floor. Here, also, many face stones are bedded in plaster of Paris, and it was therefore decided that the grouting must be carried out with richer grout. A number of holes were drilled from each side of the pier to within a short distance of the opposite side. These bore-holes were bored in a systematic manner, beginning at the bottom and about 3 feet to 4 feet apart vertically. These holes were grouted at various pressures up to 50 lb. per square inch, grouting being continued until no further grout could be injected. The grout often appeared from holes at a higher level than that at which the injection was taking place. A subsequent opening out of parts of the face work showed that this grouting method had also been successful in filling the cavities and binding together the internal aggregate. This is the method which your Commission recommend should be carried out throughout the piers, with the addition that suitable reinforcing bars should be introduced into the bore-holes before grouting is complete. After this has been done any shattered or defective face stones can be removed without danger and replaced by stones of suitable depth.

The possible effect of vibration has been investigated by the National Physical Laboratory and subsequently confirmed by Mr. Mallock, and the conclusion arrived at is that no deleterious effect is taking place from this cause. Your Commission's recommendations may therefore be summarised as follows :—

(1) To consolidate the piers by grouting through bore-

holes on similar lines to the method adopted on the North-east transept pier already referred to, by strengthening the pier temporarily with steel and timber casing during the process, and by reinforcing the piers with metal rods embedded in the bore-holes, to be followed by replacement of any defective ashlar.

(2) To encircle the drums of the dome with metal hooping to check any possible cumulative increase in circumference of this fabric.

(3) To repeat at, say, six-monthly intervals the series of levelling observations and also the plumbing and other measurements described in the report and for which special instruments have been provided.

(4) To guard against danger accruing from building operations in the immediate vicinity and below the level of the foundations of the Cathedral.

Your Commission are of opinion that, if the work advised by them is carried out, the piers will be brought into a condition at least as good as at their original construction. They do not believe that a complete reconstruction of the piers and their foundations is advisable or necessary, and they wish definitely to disassociate themselves from any proposals of this nature.

We are, gentlemen, yours faithfully,

ASTON WEBB.
BASIL MOTT.
E. C. TRENCH.
G. W. HUMPHREYS.
MERVYN E. MACARTNEY.

Mr. William Dunn having found it necessary to resign his appointment as the representative of the Royal Institute of British Architects on the Committee now being formed by the Dean and Chapter of St. Paul's in connection with the administration of the funds recently subscribed by the public for the preservation of the Cathedral, Captain C. Stanley Peach, F.R.I.B.A., has been appointed in his place.

ST. PAUL'S CATHEDRAL PRESERVATION FUND.

Since the publication of the President's letter in the JOURNAL of 24 January (see p. 123) pointing out that as the profits from the sale of *The Sir Christopher Wren Memorial Volume : 1723–1923* are to be devoted to the St. Paul's Preservation Fund, the sum of £37 16s. has been handed to the fund, and the names of the individual subscribers have been acknowledged in *The Times* for £2 2s. each. The names of the subscribers will also be published in the R.I.B.A. JOURNAL.

The price of the volume is £5 5s., and orders, enclosing remittance, should be sent to the Librarian, R.I.B.A., Conduit Street, London, W.

LOAN LIBRARY CATALOGUE.

A new catalogue, brought up to date, of the Loan Library has recently been compiled, and can be now obtained on application at the R.I.B.A., price 1s. 6d., postage 3d. extra.

British School at Rome

RETIREMENT OF THE DIRECTOR AND ASSISTANT DIRECTOR, THOMAS ASHBY, D.LITT., F.S.A.

By the retirement of Dr. Thomas Ashby this summer from the British School at Rome after some nineteen years as its distinguished director a gap will be left which will not easily be filled.

Dr. Ashby's unrivalled knowledge of Roman archæology and topography has with unvarying generosity always been at the disposal of all who have sought his help. Nothing is too much trouble—from looking up a train to taking one round the Palatine or supplying some recondite piece of information—if Dr. Ashby can thereby be of any use to the serious student.

Architects, especially when they visit Rome, will miss his kindness. For more than most archæologists Dr. Ashby understands the close bond that exists between archæology and architecture. Too often there is a failure to realise this connection, which results on the one hand in the treatment of archæology as the study of isolated remains of the past and on the other in the production of so-called "restorations" which are without any solid basis of fact.

Dr. Ashby has taught us to see the uselessness of such work. While giving every encouragement and assistance to any attempt at a reconstruction seriously based on existing evidence, he unhesitatingly lays his finger on inaccuracies and uses all the resources of his knowledge of the past to help us to make a restoration as far as possible a true picture of the site or building restored. The limitations imposed by historical fact are a salutary discipline for the imagination of the architect, and some study of history is, of course, essential as a background to any real understanding of the buildings of the past.

The British School at Rome has been singularly fortunate in having in Dr. Ashby a director who has made it his aim to stimulate artistic as well as archæological interest. In this respect students of the School in Rome have enjoyed advantages not to be found elsewhere. To watch over the work of students of five faculties—archæology, architecture, sculpture, painting and engraving—must always be a task requiring exceptional powers. To have established the value of archæological and historical scholarship in the minds of artists who often regard themselves as completely emancipated from the shackles of tradition is an achievement to which all must pay tribute.

Not only students and members of the Institute, but many other artists who have worked in Rome, have received from Dr. Ashby help and advice for which they will always be grateful.

The Royal Institute of British Architects did themselves the honour a short time ago of electing Dr. Ashby to be an Hon. Associate—a recognition not only of his eminence as an archæologist, but of his unfailing interest in the Institute and our profession, which must long have been appreciated by many of our members.

While we console ourselves by the thought that Dr. Ashby will in all probability be more within reach of those who desire to profit by his assistance, we shall all wish to record the debt which students of architecture (and especially myself) and architects owe to Dr. Ashby for the generous help he has afforded us as Director of the British School at Rome.

H. CHALTON BRADSHAW [*A.*]
Rome Scholar in Architecture 1913.

BRITISH SCHOOL AT ROME—contd.

MRS. ARTHUR STRONG, LL.D., D.LITT., F.S.A.

It is with the utmost regret that those who know Mrs. Arthur Strong will hear of her impending retirement from the British School at Rome, where she has acted as Assistant Director since 1907.

It was on my arrival in Rome, in January 1914, as the first of the Rome scholars in Sculpture, that I met Mrs. Strong for the first time, and the impressions I then gained of her charm and personality recur now most vividly to my mind. I remember the many interesting visits with Mrs. Strong, either to the Forum Romanum and the Palatine or to the Museo delle Terme to admire that wonderful marble throne of Venus—the Ludovisi Throne discovered in 1887—and talk about its Boston counterpart which is said to have turned up in the hands of a Roman dealer many years later. There was at the time a great deal of controversy about its authenticity. It was during these visits, and also during her lectures at the British School, that I learned something of her enthusiasm for research and her sensitive and imaginative appreciation of sculpture.

Mrs. Strong's activities and writings are well known; her life-work has been devoted almost entirely to the critical study of sculpture, and I should like, as a sculptor, to express my appreciation of her views. To me her great achievement is her book on Roman sculpture, published in 1907—now out of print. She deals with this vast subject, from the time of Augustus to Constantine, in an enthusiastic and convincing manner, which gave me a very different outlook on a most controversial subject. Mrs. Strong has said that the prejudice against Roman art as inferior still lives, and I must confess that in common with many students of my time my knowledge of the productions of that period was not only a little vague but almost contemptuous; we regarded them as merely colourless imitations of Greek work made by Roman craftsmen for the Roman market. In many instances this was undoubtedly the case, but after reading Mrs. Strong's very definite views on the subject one is compelled to admit that Roman art had developed primarily from the primitive Latin and Etruscan elements, and, although influenced very largely by the Greek, it formed a vital and original national art. "This Etruscan element is very necessary to grasp, because, though eclipsed by the Greek long before the Augustan period, it yet never entirely died out. It had really coalesced with native tendencies and was thus among the agencies which helped to create a Roman Imperial style out of imported Greek art."

The outbreak of war put a stop to my own studies in Rome, and since then it is only on the rare occasions when Mrs. Strong has been in London that I have had the pleasure of meeting her. I know how wide are her interests in sculpture, ranging from Greek and Roman, the Italian Renaissance, Bernini and Rodin, to the youngest school of all, the students at Rome; and I should like to hear some day her considered opinion on our own British sculpture which is now developing and changing so rapidly.

Her words, uttered now nearly twenty years ago, are prophetic in their application to the trend of present-day sculpture. "Modern portraiture has suffered from doctrines of illusionism and impressionism pushed beyond the limits of reasonableness, but the feeling for mass—the re-assertion of the material apparent in the works of certain great modern sculptors . . . induces the hope that the art of sculpture may recapture the most precious of its characteristics without passing again through the ordeal of a 'Dark Age.' In the light of science and with knowledge as a guide, art may learn to hold its intermediate conquests while making deliberate return to principles and doctrines which lie at the very root of sculpturesque expression."

GILBERT LEDWARD,
Rome Scholar in Sculpture, 1913.

WATERLOO BRIDGE.

On Thursday, 19 February, a Conference took place at the Royal Institute of British Architects which was attended by representatives of the R.I.B.A., the Town Planning Institute, the London Society, the Society for the Protection of Ancient Buildings, and the Architecture Club. Mr. Arthur Keen, Hon. Secretary R.I.B.A., presided.

The report of the Special Bridges Committee of the London County Council was discussed, and the following resolution was passed unanimously:—

> "This Conference is not satisfied that Waterloo Bridge is worn out and should be destroyed. It, therefore, recommends that the question should be referred to an independent expert Committee to determine (after hearing evidence and taking such advice as they may require) whether the Bridge can be underpinned and made strong enough for modern traffic for many years to come. In the event of such independent expert Committee reporting that underpinning is practicable, this Conference is of opinion that the underpinning should be proceeded with and provision for the increasing cross-river traffic made elsewhere, as would have been done if the sinking of one of the piers of Waterloo Bridge had not occurred."

It was decided to request the London County Council to receive a deputation from the bodies named above at their meeting on Tuesday, 24 February.

MR. RONALD P. JONES [*F.*].

A prospective addition to the architect members of the London County Council is Mr. Ronald P. Jones [*F.*], who has been selected the Progressive candidate for South-West Bethnal Green in succession to the late Mr. Stewart Headlam. The two other architect members are Mr. Andrew T. Taylor, who has long retired from practice, and Major Harry Barnes (Vice-President, R.I.B.A.), who is an Alderman, L.C.C. Mr. Jones has for twenty years been actively engaged in social work in Bethnal Green; in 1914 he designed, built and presented for all time "Mansford House," Birchington, as a seaside holiday and convalescent home for Bethnal Green people. A graduate of Oxford, Mr. Jones received his architectural training at Liverpool University; he was for a time assistant lecturer on architecture at King's College, and is a member of the Art Workers' Guild, the Society of Hellenic Studies, etc. Mr. Jones has frequently contributed to the R.I.B.A. JOURNAL. The Election will take place on 5 March.

The Prizes Conference

REFERENCE TO THE PRIZES COMMITTEE FROM THE CONFERENCE.

"To consider and report to the Prizes Conference on Wednesday, 19 November, upon the co-ordination of the Prizes of the British School at Rome, the Royal Institute of British Architects and the Society of Architects with special reference to the following points :—

[1] The establishment of some scheme of progression from the smaller to the larger Prizes.

[2] The question of setting a minimum standard of education to be required of candidates for admission to the competitions. The Conference is of the view that this is a better basis than an arrangement of maximum age limits.

[3] Methods of setting subjects and awarding Prizes.

[4] Overlapping of Prizes.

[5] Excessive number of Prizes.

REPORT.

The Committee appointed by the Conference on Prizes have carefully considered the reference to them from the Conference on the co-ordination of Prizes and the establishment of some scheme of progression from the smaller to the larger Prizes.

The Committee realise that the Prizes given within and by the schools do not come within the scope of this reference, and they have accordingly only dealt directly with the open Prizes given by—

The Faculty of Architecture of the British School at Rome,

The Royal Institute of British Architects,

The Society of Architects.

The Committee contained representatives of each of these bodies, and the suggestions embodied in this report were agreed to unanimously as a basis upon which some such scheme as the Conference desires could be brought into being without unduly disturbing the existing arrangements.

At present there is no doubt that there are many anomalies such as the age limit for the Rome Scholarship in Architecture [the most important students' Prize] which is fixed at 27, while the limit for the Soane Medallion is fixed at 30. In some Prizes a declaration is demanded that the work submitted is the student's own ; in others no such declaration is required. The work attached to some is out of all proportion to that attached to others of equal value. The values also have not in all cases been raised to meet the needs of post-war expenses. That most of these anomalies can be swept away by co-operation between the bodies concerned the Committee have little doubt.

The Committee recommend that the Prizes undermentioned be roughly divided into two groups :—

1. Students' Prizes.
2. Post-graduate Prizes and Bursaries.

STUDENTS' PRIZES.

As regards the Students' Prizes, it appears to the Committee that as the Rome Scholarship is unanimously admitted to be the senior Prize offered to the student in Design, the first step in co-ordination is to locate the other Design Prizes as far as possible in that portion of a student's career during which he may be expected to be working up for the Rome Scholarship, and that the same system of setting subjects and making awards should be adopted for these as for the Rome Scholarship.

The Prizes which appear to come under this category are :—

1. The Tite Prize.
2. The Soane Medallion.
   The Victory Scholarship.
3. The Rome Scholarship in Architecture.
   The R.I.B.A. [Henry Jarvis] Studentship. (See diagram on p. 267).

The second step is to co-ordinate the age limits or other qualifications, and in this connection the Committee would like to see the age limit in the case of the Rome Scholarship [the regulations of which are outside the control of the R.I.B.A.] raised to 30, and in the case of the other Prizes removed altogether and minimum standards of education substituted, i.e., the Final Examination of the R.I.B.A. or its equivalent, or a certificate from a responsible architect to the effect that the candidate is up to the required standard, for the Soane Medallion and the Victory Scholarship ; and the Intermediate Examination or its equivalent, or a certificate from a responsible architect, to the effect that the candidate is up to the required standard, for the Tite Prize, which is a Prize offered for the study of a particular phase of architectural design.

For all these Prizes a declaration identical with that in force for the Rome Scholarship should be insisted upon, i.e., that the work is the student's own.

The work for these Prizes should be done at a time of the year least calculated to interfere with school work. The exact period should be settled in consultation with the schools.

It will be observed that if these main considerations are approved, these Prizes will be brought into direct relationship with the career of a student in the schools without in any way preventing non-school students from competing.

In order to ensure further co-ordination and progression from one to the other, the following detailed proposals are offered by the Committee for consideration :—

Co-ordination.

The conditions for the Rome Scholarship in Architecture should be followed for the other prizes generally, and the Soane Medallion, Victory Scholarship and Tite Prize should be judged by juries composed of :—

Two members of the Board of Architectural Education [not teachers].

Two teachers [who may or may not be members of the Board].

One member of the Council R.I.B.A. [not a member of the Board].

The R.I.B.A. " critic " [non-voting member].

" *Loges.*"

The Committee recommend that for the above competitions " loges " be arranged in London and in the provinces [where necessary] under approved authorities.

The Tite Prize.

The Committee recommend that the competition be open to candidates who have passed the R.I.B.A. Intermediate or equivalent Examination [i.e., candidates in their fourth year of study], or who produce certificates from responsible architects to the effect that they are up to the required standard. The Prize to be of £50 and awarded annually instead of £100 every other year as at present.

The Committee recommend that there be a Preliminary Competition and a Final Competition.

That the Preliminary Competition shall consist of a 12 hours' sketch design done " en loge."

That the Final Competition shall consist of a 12 hours' sketch design done " en loge," candidates to be allowed a further period in which to finish their drawings.

The Committee recommend that the Jury for the Tite Prize be empowered to choose from the competitors, students whose designs are sufficiently meritorious for the purpose of exempting them from some or all of the Testimonies of Study for the Final Examination.

The Soane Medallion and the Victory Scholarship [in alternate years].

The Committee recommend that the competition be open to candidates who have passed the R.I.B.A. Final or equivalent Examination or who produce certificates from responsible Architects to the effect that they are up to the required standard.

It will be most desirable to raise the Victory Scholarship to the same value as the Soane if possible, so that these Prizes may be identical, i.e., £150 annually.

The following will be admitted direct to the *Final Stage* of the competition for the *Soane Medallion* and the *Victory Scholarship* :—

[*a*] The winner of the Tite Prize.

[*b*] The winner of the Royal Academy Silver Medal.

[*c*] The winner of the Alexander Thompson Travelling Studentship [Glasgow].

[*d*] The winner of the Rowand Anderson Travelling Studentship [Incorporation of Architects in Scotland].

[*e*] The two candidates with the highest marks in Design in the two previous R.I.B.A. Final Examinations.

[*f*] One student nominated by each School of Architecture recognised for exemption from the R.I.B.A. Final Examination.

The Committee recommend that there be a Preliminary Competition and a Final Competition. That the Preliminary Competition shall consist of a 12 hours' sketch design done " en loge."

That the Final Competition shall consist of a 12 hours' sketch design done " en loge," the candidates being allowed a further period in which to finish their drawings.

The Committee recommend that the Jury for the Soane Medallion and the Victory Scholarship be empowered to choose from the competitors for those Prizes students whose designs are sufficiently meritorious for the purpose of exempting them from some or all of the Testimonies of Study for the Final Examination.

The Rome Scholarship in Architecture and the R.I.B.A. [Henry Jarvis] Studentship.

It is recommended that the winners of the *Soane Medallion* and the *Victory Scholarship* should be admitted direct on one occasion to the *Final Stage* of the Rome Scholarship competition within, say, 2 years of passing through either of these Prizes. Students recommended by the Principal from schools with a five years' course should be exempted from submitting portfolios before taking the preliminary stage.

SKETCHING AND MEASURED DRAWINGS PRIZES.

[*No maximum age limit or minimum standard of education is laid down for these Prizes*].

†1. £50.* *R.I.B.A. Measured Drawings Prize :* [Awarded in alternate years.]—[To be remodelled on the lines of the Pugin and raised to the same value, but without the Mediæval limitation, in order to encourage measured work throughout a student's career.]

†2. £75.* *Pugin Studentship :* [Awarded in alternate years.]—Sketches and measured drawings of Mediæval work only.

POST-GRADUATE PRIZES.

The Committee recommend that the following should be regarded as post-graduate Prizes and that none should be eligible to compete for them until they have passed the R.I.B.A. Final or equivalent Examination standard or have produced certificates from responsible Architects to the effect that they are up to the required standard and reached the age of 23, and that the further modification suggested in brackets in each case should be made if possible.

1. £130. *The Godwin Bursary :* [Awarded in alternate years.]—For practising architects for special study. [Should be increased in value owing to the increased cost of post-war travel.]

2. £250. *Alfred Bossom Travelling Studentship :*—First competition about to be held.

3. £100. *Owen Jones Studentship :*—[Candidates to be required to submit drawings showing their acquaintance with colour decoration, followed by a competition for approved candidates for an architectural design in colour.]

4. £50. *R.I.B.A. Essay Prize.*

5. £50. *Grissell Gold Medal :*—Construction as at present.

6. £50. *Henry Saxon Snell Prize :* [Awarded every third year.]—Study of hospital plans as at present.

7. £50. *Arthur Cates Prize.*—There has been no competition for 10 years. [This prize might be amalgamated with the Godwin Bursary or used for a Town Planning Prize.]

MAURICE E. WEBB,

Chairman, Prizes Conference Committee.

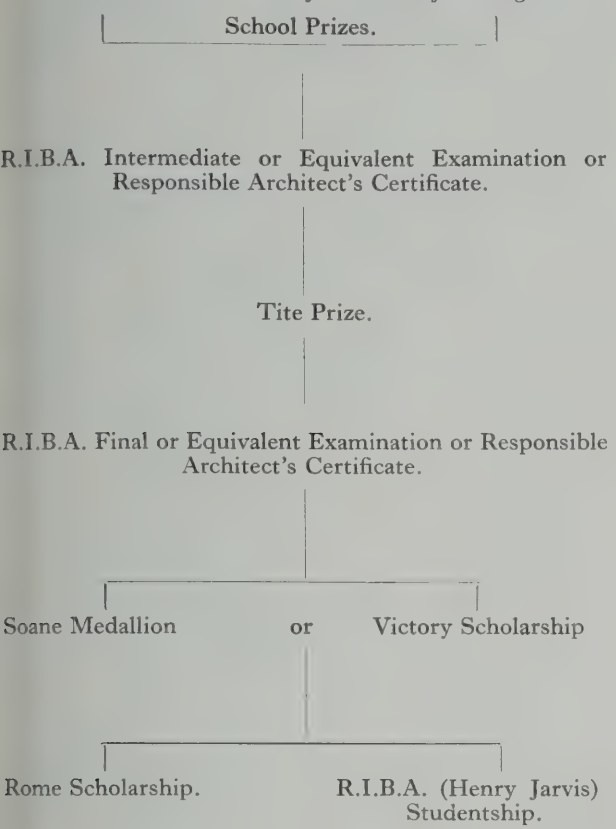
* It is intended that the work for these Prizes should be done as at present during the students' career and submitted at a time when he is ready for travel.

† N.B.—1 and 2 would then between them provide a Prize for measured drawing each year.

PRIZES CONFERENCE—contd.

DIAGRAM OF THE PROPOSALS CONTAINED IN THE COMMITTEE'S REPORT.

To illustrate the ladder of the Prizes for Design.



Obituary

R. B. MOFFAT [*Licentiate*].

Mr. Moffat, who died on 19 January, was articled to Messrs. Cancellor and Hill, at Winchester, and subsequently worked in the firm of Messrs. Parker and Unwin, first at Buxton, and subsequently at Baldock and Letchworth, where he helped in the development of the garden city. Latterly he was in practice for himself at Biggleswade, Bedfordshire. During the early part of the war he carried on the practice of Mr. A. R. Bowles, at Folkestone. Later he served in the R.N.A.S. in the meteorological department and was entrusted with special investigation work. On returning to practice he was engaged upon a housing scheme at Folkestone.

J. W. DENNISON [*F.*].

The death of Mr. John William Dennison, of Eastbourne, removes the oldest member on the rolls of the Royal Institute of British Architects. Mr. Dennison was elected an Associate over 60 years ago and was promoted to the Fellowship 53 years ago. He retired from practice in 1899.

Allied Societies

SOUTH WALES INSTITUTE OF ARCHITECTS.

"THE ARCHITECTURE WE DESERVE."

BY HALSEY RICARDO [*F.*]

(Précis of a lecture delivered at Cardiff on 5 February 1925.)

The lecturer, in the course of an historical review of the European Architecture of the past, pointed out that it was only on occasions of emotional stress, that it really represented the impulse of the nation as a whole. Except at such periods a nation was content to accept such structures as the ruling classes and the "intelligentsia" of the time provided, chiefly for their own personal needs. He showed that the elements of design had passed from the authority of the guilds to the direction by individual artists—that new materials and new methods were demanded: that the gradual invasion of scientific machinery tended to place craftsmanship on a different footing. The constructional force of the present day had two sides to it—the one concerned with the care, socially, of the whole population; the other with the physics and appearance of the buildings raised. For the satisfaction of our national conscience, we are determined that no one shall go unlettered, unhelped, uncomforted, so far as our schools, hospitals and churches can minister to the helpless. Our universities, public libraries, schools, museums and picture galleries, are available to all who desire to enjoy their benefits; and, in the days to come, our successors will point to the buildings we have raised to satisfy these needs as the outstanding triumphs of our age. In this twentieth century, architects have to take advantage of an age that is scientific and mechanical and that the best we can hope for, in the near future, is not now to return to "human" ways of building, but to the recognition of stark science, with the knowledge and availabilities that science provides for us. The scheme of production is changed; instead of man providing from himself the necessary power to execute his work, the power is brought to him from the power house. The individual artizan is now but an unit in the group for production; tradition has to be most severely examined as to its ancestry, what were the then conditions that brought it into being. We live in a country in an age that has no parallel to the past. Never before has the feeling of humanity, our duty and care for human suffering been so recognised and attended to; never before has the hitherto dumb mass of toilers been given such a voice in the management of their welfare and in the Government of the State.

The researches of science and the prodigious achievements of machinery have given the constructors a power unmatched in the most opulent period of Roman magnificence—a power for relieving drudgery, co-ordinating labour, carrying construction to a pitch of accuracy and daring never so much as even dreamt of before: new materials, new knowledge of the capabilities and the physics of old familiar materials, the tradition of the past transmuted into scientific observation and records of what is possible and advisable as to their employment and extension; these are the qualities that should appear in the architecture of our time if our architecture is to be a living art. They must represent the spirit, set forth the wealth of science and mechanical energy that is to our

hand, fused into a serviceable entity by the heat of the spirit of adventure ; and the outcome—in course of time —will be the architecture that we deserve.

NORTHERN ARCHITECTURAL ASSOCIATION.

THE ANNUAL DINNER OF THE NORTHERN ARCHITECTURAL ASSOCIATION was held at Newcastle-upon-Tyne on the 23rd January.

Mr. W. T. Jones, F.R.I.B.A., F.S.A., presided, and the guest of honour was Mr. J. A. Gotch, F.R.I.B.A., F.S.A., President of the RoyalIn stitute of British Architects.

PRINCIPAL MEMBERS AND GUESTS.

W. T. Jones, F.S.A. [*F.*], President, Northern Architectural Association ; J. Alfred Gotch, P.R.I.B.A. ; Councillor T. A. Lowe, Deputy Lord Mayor ; Canon Ellershaw, Master of Durham Castle; Lieut.-Colonel G. Reavell, O.B.E., F.R.I.B.A., Vice-President, Northern Architectural Association ; Major Harry Barnes, Vice-President, R.I.B.A. ; Ian MacAlister, Secretary of the Royal Institute of British Architects ; J. T. Cackett, J.P. [*F.*], Past President, N.A.A. ; A. B. Plummer, J.P. [*F.*] Past President, N.A.A. ; Wm. Milburn, O.B.E. [*F.*], Past President, N.A.A. ; R. Burns Dick [*F.*], Past President, N.A.A. ; C. S. Errington [*F.*], Past President, N.A.A. ; F. N. Weightman, Licentiate, R.I.B.A. ; Geo. G. Gray [*A.*], Hon. Secretary, Northern Architectural Association ; Councillor James Lunn, Chairman, Town Improvements Committee ; Major Robert Temperley, Chairman of the Council of the Newcastle-upon-Tyne Society ; James Scott, President, Newcastle Centre Surveyors' Institute ; S. Addison Smith, F.S.I., A.R.S.I., President Northern Quantity Surveyors' Association ; Douglas G. Cochrane, President Northumberland, Durham and Tees-Side Building Brick Association ; R. S. Middleton, President Sunderland Law Society ; Henry Bell, Inst. Builders, President Northern Counties Federation of Building Trade Employers ; A. M. Oliver, O.B.E., Town Clerk, Newcastle-upon Tyne ; W. J. Steele, D.S.O., A.M.Inst.C.E., City Engineer ; W. H. Hope, Secretary, Northern Counties Building Trade Enployers ; J. A. E. Lofthouse [*F*] ; A. Harrison, Hon. Secretary, Tees-Side Branch N.A.A. ; Dr. Percy Corder ; Lieut.-Colonel H. Cyril Millican ; Frank L. Moore, M.B. ; W. Jennens Hackett ; A. K. Tasker [*F.*] ; J. Wilson Hays [*F.*] ; J. W. Boyd ; R. N. MacKellar [*A.*] ; W. Stockdale [*A.*] ; W. Ellison Fenwick ; L. W. Taylor ; F. M. Dryden, Licentiate R.I.B.A. ; S. W. Milburn, M.C. [*A.*] ; R. Wylie [*A.*] ; S. F. Bestow [*A.*] ; F. A. Child [*A.*] ; G. Talbot Brown [*A.*] ; W. Steel, Licentiate R.I.B.A. ; T. Douglas Caws ; F. H. Checkley, Assist. Hon. Secretary, N.A.A.

Major Robert Temperley, chairman of the Council of the Newcastle-upon-Tyne Society who proposed the toast " The Royal Institute of British Architects and Allied Societies," said most of them were anxious for a revolution with regard to three-fourths of the areas in their industrial cities. That revolution could not take place without an alliance between the lay public and the architects. As Chairman of the Newcastle Society, he acknowledged the initial work of the secretary, Colonel Mitchell, and the helpful support of the architect.

Mr. J. A. Gotch, responding on behalf of the Royal Institute of British Architects, said that with the enormous increase in the number of architects there had been an increase in the quality of the work throughout the country. No longer had they to look to London to supply architectural designs ; and this had been brought home to them by the meritorious work from the provinces to be seen at the great exhibition in Paris.

The present prizes and scholarships of the Institute were to be co-ordinated and a sort of ladder was to be formed so that there would be a crescendo series which would lead from the more simple problems up to the blue riband of the Institute, the Rome Prize. They hoped to form the foundation of maintenance scholarships, which would enable ambitious and skilful lads of narrow means to be trained as architects.

Mr. T. R. Milburn [*F.*], past president of the N.A.A., responded on behalf of the allied societies.

Major Harry Barnes, F.S.I. (vice-president R.I.B.A.), giving the toast of " The Municipal Corporations of the Province," referred to Newcastle's architectural traditions. Referring to housing and new types that were being advocated, he said that there was nothing equal to brick and tile, plaster and slate. Whatever had been found, at its best, was only something approaching the qualities of those materials. It would be most unfortunate if municipalities were led to something else. He hoped the Newcastle Corporation and other corporations would at least be guided by competent architectural advice in the matter, so that there would not spring up all kinds of bricks and fences that would remain as matters of regret.

Responding to the toast, Councillor T. A. Lowe (Deputy Lord Mayor of Newcastle), in the course of his speech, said :—

" I consider that the time has come that we may appeal to you gentlemen to help us educate the public of this district towards creating new municipal buildings. I cannot conceive any other municipality carrying on under such terrible conditions. It is a bad policy to avoid spending money with loss of efficiency."

Other speakers were Lieut.-Colonel G. Reavell [*F.*] (vice-president of the Northern Architectural Association) and Mr. Henry Bell, Associate of the Institute of Builders and President of the Northern Counties' Federation of Building Trades Employers, who referred to the ca' canny spirit that had found its way into the craftsmanship of the builder. If they could get back to the honesty that prevailed 20 or 30 years before the war they could build fairly good and commodious houses for £300 instead of something approaching double that price.

THE NORFOLK AND NORWICH ASSOCIATION OF ARCHITECTS.

The Annual Meeting of the Norfolk and Norwich Association of Architects was held at Norwich, on Friday, 30 January. The annual report and balance sheet were adopted.

The following were elected Officers and Members of Council for 1925.

President.—E. T. Boardman, F.R.I.B.A.

Vice-Presidents.—G. J. Skipper, F.R.I.B.A. ; J. Page, B.A., A.R.I.B.A.

Hon. Secretary.—E. W. B. Scott, A.R.I.B.A.

Council Members.—E. H. Buckingham, A.R.I.B.A. ; C. Upcher ; S. J. Wearing, A.R.I.B.A.

Associate Member of Council.—F. A. Varney.

Honorary Auditor.—J. O. Bond, Lic.A.R.I.B.A.

The prizes awarded for the competitions for measured drawings and sketches, to G. S. Buckingham and G. Bidwell, were presented.

NOTES FROM THE MINUTES OF THE COUNCIL MEETING.

2 *February* 1925.

City Churches Conference.

Sir Banister Fletcher was appointed as a representative of the R.I.B.A. on the City Churches Conference in place of the late Mr. Paul Waterhouse.

R.I.B.A. Maintenance Scholarship.

On the recommendation of the Board of Architectural Education, the Council decided to establish a Maintenance Scholarship of £100 a year, tenable at one of the recognised schools.

Bristol School of Architecture.

The Council decided to make an annual donation to the funds of the Bristol School of Architecture.

R.I.B.A. Examiners.

On the recommendation of the Board of Architectural Education, the R.I.B.A. Examiners for 1925 were appointed as follows :—

Intermediate.

H. Chalton Bradshaw	A.1. & A.2.
Theodore Fyfe	Do.
Arthur Stratton, F.S.A.	Do.
P. J. Waldram	B.
L. de Soissons	C.
Professor L. B. Budden	Do.
L. H. Bucknell	Do.
F. Winton Newman	D.
W. S. Purchon	Do.

Final and Special.

L. de Soissons	A.
Professor L. B. Budden	Do.
L. H. Bucknell	Do.
Donald Cameron	B.1. & B.2.
Alfred Conder	Do.
W. E. Vernon Crompton	Do.
Professor A. C. Dickie	Do.
W. R. Davidge	C.
H. D. Searles-Wood	D.
A Vice-President	E.

Thesis Examiners.

Halsey Ricardo	F.1.
Arthur Stratton, F.S.A.	Do.
S. D. Kitson, F.S.A.	Do.
W. S. Purchon	Do.
Alan E. Munby	F.2.
Raymond Unwin	F.3.
Professor L. B. Budden	Do.

R.I.B.A. Visiting Board.

On the recommendation of the Board of Architectural Education the Council appointed the R.I.B.A. Visiting Board for 1925 as follows :—

Mr. W. Curtis Green, A.R.A., Chairman of the Board of Architectural Education.

Mr. Maurice E. Webb, Vice-Chairman of the Board of Architectural Education.

Mr. Henry M. Fletcher, Hon. Secretary of the Board of Architectural Education.

Professor C. H. Reilly, Teaching Member.

Exhibition of Students' Designs.

On the recommendation of the Board of Architectural Education it was decided that the Schools with Final exemption be required to submit two designs (one of which must be carried to the stage of working drawings) on behalf of each student exempted.

Membership of the Board of Architectural Education.

Mr. Howard Robertson was appointed a Member of the Board of Architectural Education in place of the late Mr. Paul Waterhouse.

British Engineering Standards Association.

The Council made a grant of £5 to the funds of the British Engineering Standards Association.

Reinstatement.

Mr. Fred A. Walker was reinstated as an Associate.

Resignations.

The following resignations were accepted with regret:

Mr. Ellis F. Cook (Licentiate 1910).

Mr. D. W. Sturrock (Licentiate 1911).

Mr. J. H. Willis (Licentiate 1911).

CAMBRIDGE UNIVERSITY SCHOOL OF ARCHITECTURE.

The Board of Architectural Studies at Cambridge have appointed Mr. George Checkley, A.R.I.B.A., at present holding the Jarvis Scholarship, as an Assistant Master in the University School of Architecture. Mr. Checkley will take up his duties at the beginning of the Easter term and return to Rome during the summer to complete his work there.

THE BRITISH SCHOOL AT ROME.

The Rome Scholarship in Architecture 1925 Preliminary Competition.

The Faculty of Architecture of the British School at Rome have selected the following candidates to compete in the final competition for the Rome and Henry Jarvis Scholarships of 1925 :—

F. N. Astbury (Liverpool University).
R. W. Briggs, B.A., A.R.I.B.A. (Manchester University).
G. A. Butling (Liverpool University).
Irene J. Macfadyen (Architectural Association).
C. A. Minoprio, B.Arch. (Liverpool University).
Elsie Rogers, B.A. (Finalist 1924, exempted from Preliminary Competition 1925) (Manchester University).
W. F. Scarlett, B.A. (London University).
H. G. C. Spencely (Liverpool University).
R. J. Willis, M.A., A.R.I.B.A. (Manchester University).

The designs submitted in the Preliminary Competition of 1925 will be on exhibition at the Royal Academy Galleries from 6 to 14 March next.

SOCIÉTÉ DES ARCHITECTES DIPLÔMÉS PAR LE GOUVERNEMENT.

The officials of the S.A.D.G. have been constituted for the year 1925 as follows :

Président :—M. Camille Lefèvre.

Vice-Présidents —MM. M. Aubertin, P. Remaury et E. Maigrot (de Reins).

Secrétaire Général.—M. A. Schneider.

Trésorier.—M. M. Poupinel.

Archiviste.—M. A. Jalabert.

Bibliothécaire.—M. G. Tzakiri.

Secrétaires.—MM. H. Constant-Bernard, R. Segrand, et Mlle. J. Surugire.

Notices

SPECIAL AND BUSINESS GENERAL MEETING 2 MARCH 1925

A Special General Meeting will be held on Monday, 2 March 1925, at 8 p.m., for the following purposes :—

(1) To read the Minutes of the Special General Meeting held on Monday, 16 February 1925 ; (2) to confirm the following resolution which was passed by the requisite majority at a Special General Meeting held on Monday, 16 February 1925 :—

That the new Bye-law 29 be amended by the addition of the following words after paragraph (*f*) :—

"(*g*) The Chairman of the Board of Architectural Education, being a Fellow of the Royal Institute,"

and that the necessary steps be taken to obtain the sanction of the Privy Council to such addition to Bye-law 29 as is required to give effect to this resolution.

(3) To elect the Royal Gold Medallist for the current year. The Chairman to move :—

That, subject to His Majesty's gracious sanction, the Royal Gold Medal for the promotion of Architecture be presented this year to Sir Giles Gilbert Scott, R.A., in recognition of the merit of his work as an architect.

THE NINTH GENERAL MEETING

The Ninth General Meeting (Business) of the Session 1924–25 will be held on Monday, 2 March 1925, at the termination of the Special General Meeting, for the following purposes :—

To read the Minutes of the General Meeting (Ordinary) held on Monday, 2 February 1925 ; formally to admit members attending for the first time since their election.

To proceed with the election of the candidates for membership whose names were published in the JOURNAL for 10 January 1925 (page 160), and 7 February 1925 (page 238).

Mr. Owen Fleming [*A.*], to invite attention to recent and impending architectural changes in the neighbourhood of Charing Cross Station and to move a resolution.

VISIT TO THE SIR JOHN SOANE MUSEUM.

A visit has been arranged by the Art Standing Committee to take place on Saturday, 28th February, to the Sir John Soane Museum. As the number attending must be limited, members desirous of taking part are requested to make early application to the Secretary, R.I.B.A., 9, Conduit Street, London, W.1.

ELECTION OF MEMBERS, 8 JUNE 1925.

Associates who are eligible and desirous of transferring to the Fellowship Class are reminded that if they wish to take advantage of the Election to take place on 8 June 1925, they should send the necessary nomination forms to the Secretary, R.I.B.A., not later than Saturday, 21 March.

THE 58TH ANNUAL CONVENTION OF THE AMERICAN INSTITUTE OF ARCHITECTS. 20TH TO 24TH APRIL 1925.

The attention of Members is called to the cordial invitation received from the President of the American Institute of Architects to British architects to attend the above Convention to be held in New York (see R.I.B.A. JOURNAL, page 194, 24th January 1925).

It is hoped that a substantial number of British architects will be able to take advantage of this most welcome invitation and that they will send their names as soon as possible to the Secretary, R.I.B.A., 9, Conduit Street, London, W.1, from whom particulars can be obtained as to steamship sailings, passage rates, hotel accommodation, passports, etc.

BOARD OF ARCHITECTURAL EDUCATION. EXHIBITION OF ARCHITECTS' WORKING DRAWINGS.

An Exhibition of Architects' Working Drawings is being held in the R.I.B.A. Galleries and will remain on view until Saturday, 7th March 1925.

The Exhibition will be open daily between the hours of 10 a.m. and 8 p.m. (Saturdays, 5 p.m.) and will include drawings kindly lent by :—

Sir Edwin L. Lutyens, R.A. [*F.*] (Britannic House).

Sir John J. Burnet, A.R.A., R.S.A. [*F.*] (Adelaide House).

Messrs. Helmle and Corbett (Bush House).

Mr. H. S. Goodhart-Rendel [*F.*].

The Exhibition is intended primarily for students of architecture ; they will be able to examine the drawings that a practising architect hands to a contractor, and thus will be afforded an insight into the methods adopted in a modern architect's office.

Competitions

COMPETITION FOR A HIGH BRIDGE OVER COPENHAGEN HARBOUR.

Copenhagen Municipality hereby invite participation in an International Competition in connection with a High Bridge over Copenhagen Harbour.

The Municipality have set apart a sum of 35,000 kroner to be expended in prizes. There will be three prizes, the value of which will be fixed by a Judgment Committee consisting of Members of the Council, together with technicians chosen by the Municipality, the (Danish) Institute of Civil Engineers and the (Danish) Society of Architects. The largest prize will be at least 15,000 kroner.

Programme and particulars in Danish and English can be procured after 1 February 1925, from the City Engineer's Office, Town Hall, Copenhagen B, against a deposit of kr. 100.

The deposit is repayable after the judging, or previously if the drawings, particulars, etc., are returned in good condition. Projects to be delivered to the City Engineers Directorate, Town Hall, before mid-day, 1 September 1925.

After judgment the competing projects will be publicly exhibited at the Town Hall, Copenhagen.

LEAGUE OF NATIONS.

COMPETITION FOR THE SELECTION OF A PLAN WITH A VIEW TO THE CONSTRUCTION OF A CONFERENCE HALL FOR THE LEAGUE OF NATIONS AT GENEVA.

The League of Nations will shortly hold a competition for the selection of a plan with a view to the construction of a Conference Hall at Geneva. The competition will be open to architects who are nationals of States Members of the League of Nations.

An International Jury consisting of well-known architects will examine the plans submitted and decide their order of merit.

A sum of 100,000 Swiss francs will be placed at the disposal of the Jury to be divided among the architects submitting the best plans.

A programme of the competition will be ready in February, 1925, and will be despatched from Geneva so that Governments and competitors may receive copies at approximately the same date. Copies for distant countries will therefore be despatched first.

The British Government will receive a certain number of free copies. These will be deposited at the Royal Institute of British Architects, and application should be made to the Secretary, R.I.B.A., 9, Conduit Street, W.1, by intending competitors.

Single copies can be procured direct from The Secretary-General of the League of Nations at Geneva, for the sum of 20 Swiss francs, payable in advance, but will not be forwarded until after the Government copies have been despatched.

On the nomination of the President of the Royal Institute, Sir John Burnet, A.R.A., has been appointed as the British representative on the Jury of assessors.

UGANDA RAILWAY NEW OFFICE, NAIROBI.

Apply to the Crown Agents for the Colonies, 4 Millbank, Westminster, S.W.1. Closing date for receiving designs, 28 February 1925. Assessor: Mr. William Dunn, F.R.I.B.A. Deposit £1 1s. Telegram received:—

"Reference New Railway Offices. Many requests received from competitors for extension of competition. Agree to one month extension. Please advertise this. Lists of questions and answers being sent by first mail for distribution."

THE NEW INSTITUTE FOR THE BLIND, BUENOS AIRES, ARGENTINE REPUBLIC.

An International Competition has been promoted for the Argentine Institution for the Blind, Buenos Aires, Argentine Republic.

A small number of copies of the Conditions have been deposited in the R.I.B.A. Library for the information of British Architects who may desire to compete.

MASONIC MEMORIAL COMPETITION.

Apply to The Grand Secretary, Freemasons' Hall, Great Queen Street, W.C.2. Last day for applying for conditions, 23 August 1924. Deposit, £1 1s. Closing date for receiving designs, 1 May 1925. Assessors: Sir Edwin Lutyens, R.A. [*F.*] (appointed by the President); Mr. Walter Cave [*F.*], Mr. A. Burnett Brown, F.S.I.

MANCHESTER ART GALLERY.

Apply to the Town Clerk, Town Hall, Manchester. Closing date for receiving designs, 28 February 1925. Assessors: Professor C. H. Reilly, O.B.E. [*F.*], Mr. Percy S. Worthington, Litt.D., F.S.A. [*F.*].

BETHUNE MEMORIAL TO THE MISSING.

The Imperial War Graves Commission desire Members and Licentiates of the Royal Institute to be reminded that applications to take part in the above Competition from persons other than those who had signified their intention of competing on or before 1 January 1924 cannot be considered. Due notice of this regulation was published in the Professional Press on various occasions during August and September, 1923.

TECHNICAL COLLEGE, MIDDLESBROUGH.

The conditions of the above Competition have been submitted to the Competitions Committee of the R.I.B.A., and are found to be in accordance with the Regulations of the R.I.B.A.

ROYAL SOCIETY OF ARTS.

MEMORIAL LIBRARY FOR A COLLEGE COMPETITION.

In order to encourage the study of designs for industrial purposes the second series of open competitions organised by the Royal Society of Arts will include a competition for a Memorial Library for a College suitable for housing a small but rare collection of books.

The conditions are as follows:

A Travelling Scholarship of the value of £150 for one year will be offered on the following conditions:

Candidates must not be over 35 years of age. They must be prepared to travel in France, Italy, Spain or Flanders for six months, which, however, may be broken up into periods of, say, three or two consecutive months.

SUBJECT OF COMPETITION.

The subject is a Memorial Library for a College, suitable for housing a small but rare collection of books.

The superficial area of the room is not to exceed 1,500 feet. The method of arranging the bookcases and displaying a few *objets d'art* is left to the competitor. Cost is not a primary consideration, and the use of expensive woods, as well as inlays of ivory, ebony or metal, in addition to marble, can be considered.

In a suitable place a commemorative panel or some other *motif* should remind the visitor of the origin of the Library. The scheme of the ceiling, which can be treated as a space for decorative painting, as well as the pattern of the floor, must harmonise with the whole design.

A preliminary competition of twelve hours will be held in London and other centres in April 1925. Candidates must give notice of their intention to compete to the Secretary of the Royal Society of Arts, not later than 14 March. For this competition the following drawings will be necessary:

A plan of the floor, one section, and a plan of the ceiling, all to the scale of a quarter of an inch to a foot.

For the final competition two months will be allowed to the competitors, selected after the first competition. The finished drawings are to include the following:

Plans of floor and ceiling and two sections to a scale of half an inch to a foot, a detail drawing of the fireplace or some other feature, showing the complete height and treatment of the room from floor to ceiling.

Competitors should bear in mind that electric lighting and central heating are to be considered.

The competition will take place in June 1925.

Members' Column

ACCOMMODATION OFFERED.

ARCHITECT'S WIDOW offers good accommodation, bed and breakfast, near Russell Square; central for all parts of London. Bath room, electric light; well recommended and terms moderate. —Reply Box 1425, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

PARTNERSHIP WANTED.

A.R.I.B.A., B.Arch. Liverpool, age 31, desires partnership with established architect who requires a junior, or post in office with a view to partnership. Good qualifications and references.—Apply Box No. 9225, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.1.

A.R.I.B.A. seeks partnership in old-established London firm, willing to invest capital and amalgamate own practice.—Reply Box 3112, c/o Secretary R.I.B.A., 9 Conduit Street, W.

COLLABORATOR WANTED.

COLLABORATOR sought by F.R.I.B.A.; mutual arrangements in offices and work.—Box 482, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.1.

APPOINTMENTS WANTED.

ARCHITECTURAL ENGINEER of very large experience desires work temporary or permanent, anywhere. Special qualifications in geology, mining, drainage, underpinning and shoring, ventilation and heating, foundations and dilapidations, building and land surveying, also levelling. Highest references. Willing to take charge of job.—Apply Box 8322, c/o Secretary R.I.B.A., 9 Conduit Street, W.

STUDENT R.I.B.A., age 22, who has had a particularly sound office training and is at present employed by a leading firm, would be glad to hear from any member or firm requiring assistance. Salary required £286 per annum. Present salary £200 per annum, —Apply Box 5625, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.1.

CLERK OF WORKS RECOMMENDED.

CLERK OF WORKS.—A member thoroughly recommends a good Clerk of Works for Church, College, or Mansion House work.—Full particulars on application to the Secretary R.I.B.A., 9 Conduit Street, London, W.1.

Minutes VIII

SESSION 1924–25.

At a Special General Meeting held on Monday, 16 February, 1925, at 8 p.m., Major Harry Barnes, Vice-President, in the Chair.

The attendance book was signed by 13 Fellows (including 7 Members of the Council), and 17 Associates (including 1 Member of the Council), and 1 Licentiate.

The Minutes of the Special General Meeting held on 7 July, 1924, having been published in the JOURNAL, were taken as read, confirmed, and signed by the Chairman.

The Secretary announced the decease of the following Members :—

Mr. BARR FERREE, B.Sc., of New York, elected Hon. Corr. Member 1894.
Mr. WALTER THOMAS CRESSALL, elected Associate 1891.
Mr. JORDAN GREEN, elected Associate 1903.
Mr. WILLIAM MACKAY, elected Licentiate 1911.

and on the motion of the Chairman it was RESOLVED that the regrets of the Institute for the loss of these Members be recorded on the Minutes of the meeting, and that a message of sympathy and condolence be conveyed to their relatives.

The Chairman having moved the following RESOLUTION which was submitted to the General Body by the Council on the recommendation of the Practice Standing Committee :—

> " That all public buildings paid for out of the rates or other public funds should be technically and architecturally worthy of the locality. To achieve this end, the design of such buildings should either be the subject of competition or entrusted to a qualified architect; and further, that this resolution, if approved, be forwarded to the appropriate authorities."

the resolution was passed *nem. con.*

The Chairman announced that the next business was to consider, and, if thought fit, to approve a scale of architects' charges for housing work prepared by a Special Committee and approved by the Council, with a view to the incorporation of such scale in the R.I.B.A. Scale of Professional Charges in the place of the existing Clause 9. Mr. H. T. Buckland (Vice-President) moved, and Mr. Herbert A. Welch (*F.*) seconded, the following resolution :—

" With the object of assisting in the solution of the national housing problem, and having in view the necessity for the employment of qualified architects on housing work, the members of the Royal Institute of British Architects assembled in general meeting, resolve to modify their charges in connection with housing schemes for local authorities and public utility societies, and agree to accept a reduced scale of charges for such work.

" And, further, that this resolution, if approved, be transmitted to the Ministry of Health and local authorities, together with a copy of the scale."

The resolution, having been seconded, was carried *nem. con.*

The draft scale prepared by the Special Committee was then considered in detail. A number of suggestions having been made for the amendment of the draft scale, it was finally RESOLVED that the scale as drafted be approved, subject to such amendments as might be made by the Special Committee in the light of the criticisms and suggestions put forward at the meeting, and that the Special Committee be given full powers to complete the drafting of the scale and to authorise its publication without the necessity of submitting it again to the General Body. It was further RESOLVED that Clause 9 be omitted from the existing R.I.B.A. Scale of Charges, and that the new Scale of Fees for Housing Work be printed and issued as a separate document. It was further RESOLVED that a very hearty vote of thanks be passed in favour of the Committee for their arduous and successful work in the preparation of the new scale.

The Chairman having announced that the next business was the consideration of the Council's proposal for the amendment of the new Bye-law 29, it was RESOLVED that the new Bye-law 29 be amended by the addition of the following words after paragraph (f) :—

" (g) The Chairman of the Board of Architectural Education, being a Fellow of the Royal Institute,"

and that the necessary steps be taken to obtain the sanction of the Privy Council to such addition to Bye-law 29 as is required to give effect to this resolution.

It was further RESOLVED that the Council be requested to give their consideration to the propriety of extending the principle of *ex-officio* representation on the Council to the Chairmen of the four Standing Committees.

The proceedings terminated at 10.5 p.m.

It is desired to point out that the opinions of writers of articles and letters which appear in the R.I.B.A. JOURNAL must be taken as the individual opinions of their authors and not as representative expression of the Institute.

R.I.B.A. JOURNAL.

Dates of Publication.—1924: 8th, 22nd November; 6th, 20th December. 1925: 10th, 24th January; 7th, 21st February; 7th, 21st March; 4th, 25th April; 9th, 23rd May; 13th, 27th June; 18th July; 15th August; 19th September; 17th October.

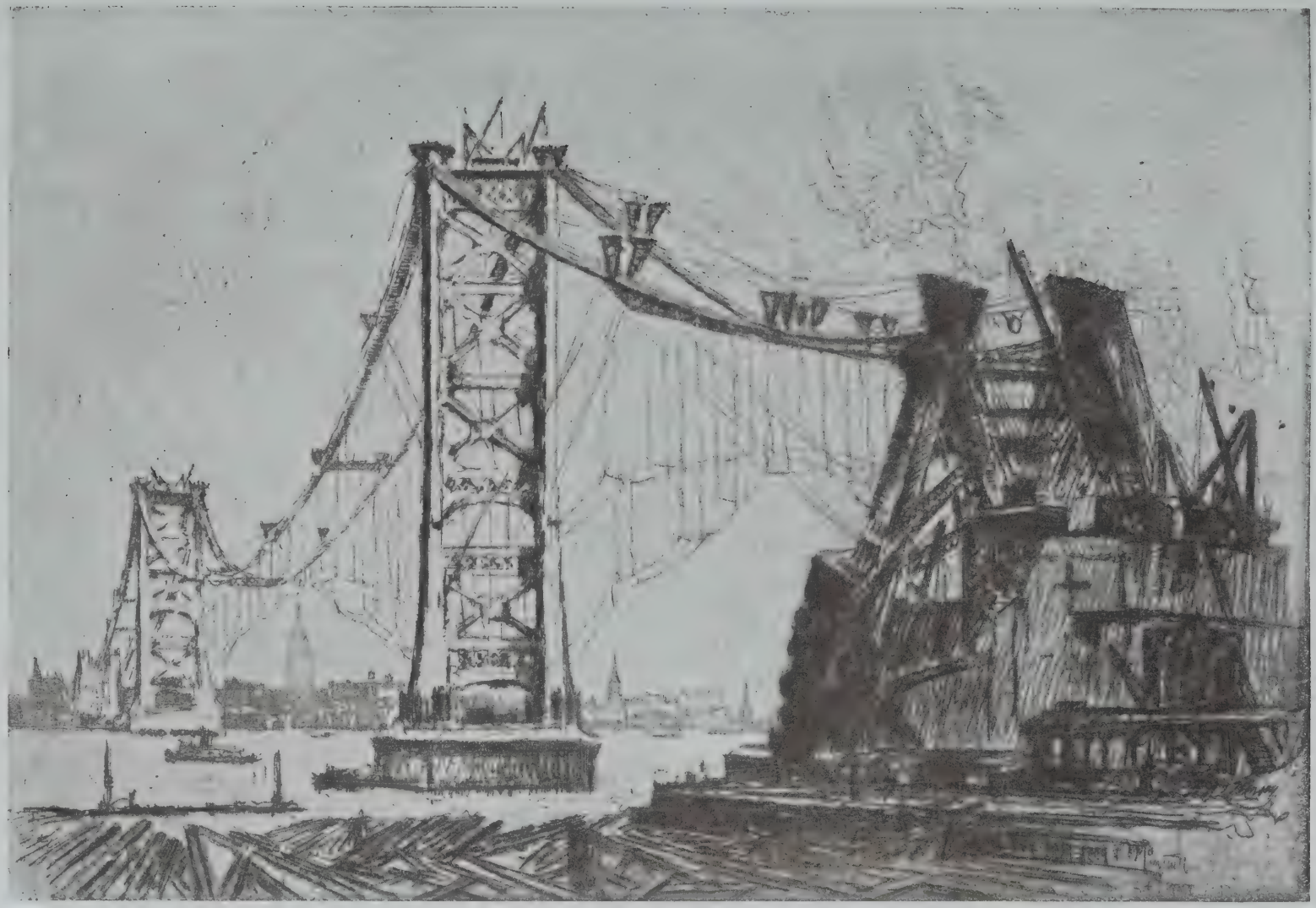
THREE ETCHINGS OF BUILDINGS IN NEW YORK

By JOSEPH PENNELL, Hon. Assoc. R.I.B.A.

[THE ORIGINAL ETCHINGS WITH FOUR OTHERS HAVE RECENTLY BEEN PRESENTED TO THE R.I.B.A. BY THE ARTIST]

UNIVERSITY OF ILLINOIS

FOUNDATIONS OF THE TELEGRAPH AND TELEPHONE BUILDING, NEW YORK.
MC.KENZIE VOORHEIS & CO., ARCHITECTS.



The New Bridge over the Delaware River, Camden to Philadelphia. Paul Cret, Architect.

THE FOUNDATION OF THE TELEGRAPH AND TELEPHONE BUILDING, NEW YORK.
Sinking Caissons (Woolworth in distance).

FIG. 11.—RAILWAY STATION, HELSINGFORS. Architect, Eliel Saarinen

Modern Architecture of the North

BY HOWARD ROBERTSON, S.A.D.G., F.S.ARC.

(Paper read before the Architectural Association of Ireland, 17 February.)

THERE are unmistakable signs at the present moment of a movement in England towards an architecture which is a direct expression of a modern outlook and a solution, as far as may be possible, of modern problems. This movement is evidenced, not alone by examples of buildings recently erected, of which there are indeed few enough, but by the tendencies of the schools of architecture, encouraged by a wider toleration on the part of such bodies as the Board of Architectural Education and the Rome Faculty in Architecture, and by the spoken and written papers and discussions which have been published during the last three or four years. We find, in competition work, the awarding of premiums to designs which in elevational treatment are beginning to break away from the more or less academic type which had almost crystallised into a competition style; and we may hear, at the meetings of the Royal Institute and the Architectural Association, men like Professor Richardson, leaders of architectural thought, preaching the modern doctrine of function and structure as essentials in architecture, with style arising directly from them—style, in fact, understood as a perfection in expression rather than an already existing and adaptable phase or manner.

The movement towards a modern architecture is not new in England; but it has required the war and the example of other countries to open up the development of a spirit which originated very largely on English soil but which was repressed by conservatism and the lack of sequence in early effort. Designers like William Morris, architects like Charles Voysey and C. R. Mackintosh are considered abroad as originators to a degree which is not perhaps felt in England. Their influence has been like a spark which has kindled the imagination of those who were far enough away to enjoy it in detachment; in England itself there has been too heavy a weight of counter-influence to permit the early formation of a modern school, while a lack of breadth in the outlook of the followers of those pioneers in design has resulted in the movement being frittered away in the direction of the lesser arts and crafts.

The reaction against the spirit of the architecture which has characterised the last half-century is the direct outcome of the artistic poverty which follows inevitably on reproduction work. Any architecture in which the spirit of invention is cramped by a code and a convention cannot very long endure; and by attempting to design buildings to fit styles, instead of evolving styles to suit our buildings, we have merely demonstrated that that particular avenue of architectural effort is a blind alley. At present, having awakened to a realisation of our sad state in modern architecture, we may lay plans for a future improvement and assist in this end by a short survey of what is

transpiring in countries whose conditions of modern life are very much similar to our own.

Probably the most important architectural movement of the last thirty or forty years is the great pseudo-classic revival in the United States, initiated through French training and brought to the finest pitch by McKim, Mead and White. American conditions render this movement without precise parallel in modern Europe, for the States had no tradition of their own and had hurriedly to evolve an architecture suitable to the rather special conditions of vast territory, infinitely varied climate, and unlimited natural resources. The influence of men like McKim and Burnham in the East and the Middle West was like a strong rock in a sea of chaos, a sort of lighthouse of intellectual sanity which, by providing a high standard of design, obliged less scrupulous builders to maintain a certain decency. The excellence of proportion, the eclecticism in taste and selection, the beauty of the actual execution in the firms' work, have brought the classical renditions in which they excelled to a pitch of excellence upon which it is difficult to improve, and which therefore seems to mark, as it were, the close of an actual epoch or period.

The limitations of the McKim manner are, however, clearly evident to anyone who has visited America and seen how splendid buildings like the Pennsylvania station owe their principal defects to the ungrateful task of marrying stylistic architecture to problems whose logical expression is quite other than classical. This limitation is being felt in America as in Europe, and a newer school of designers is beginning to tackle modern problems on a rational basis. American architects have been forced along the path of evolution by their very laws, as in the case of the zoning regulations, which have opened up vistas of plastic treatment in the form of skyscrapers which sound the death knell of the ancient formula of a temple at the top and a temple at the bottom with an office building unhappily wedged between these upper and nether millstones.

Fig. 1.—Atelier, rue Philippe Auguste, Paris. Architects, A. and G. Perret

Illustrations of recent American factory and commercial work generally show that the modern expression can be more practical than, and yet equally interesting as, the old, shorn as its form will be of the eccentricities which characterised some of the early essays of men like Sullivan and Lloyd Wright. In America to-day only a few types, schools, universities, churches and banks remain traditional; and their architecture, while excellent in execution, is generally born spiritually dead from the damp-course up.

An American architect friend of mine has just written to me some comments, amongst which is the remark that the States, in modern architecture, are ten years behind Western Europe and twenty years behind Central Europe. That statement is possibly exaggerated, but certain it is that for progress in architectural design we must look chiefly to Central and Northern Europe, and then, missing out England, cross over to France, which is catching up her new architectural rival with surprising rapidity. (Figs. 1 and 2).

Post-war Germany I know only by hearsay and illustration, but it is easy to see the immense strides which have been made in reviving the almost defunct art of design. Modern materials like concrete, the very limitations of urgent economy, and an awakened spirit of inquiry and imagination are responsible for some very stirring failures and a number of outstanding successes. The Germans, with their talent for research, have grubbed their way down through the mass of architectural reference nowadays available till they came to the discovery of something very like first principles. They are studying planning, economics, function and structure, and are studying at the same time form and expression both in mass and in detail.

German architecture has passed through the phase of art nouveau, and, while still suffering from the condition of experiment and its inevitable accompaniment of eccentricity, has evolved a new and often austere type characterised by strength of mass and the use of prolonged horizontal or vertical lines with well patterned fenestration (Fig. 3). The detail is evolving, too, in keeping with the direct character of the mass, the tendency being for ornament to have an expressive meaning in addition to its purely decorative function.

Modern architecture of Germany has strongly influenced that of her neighbours Switzerland and Holland, while as regards Belgium, the home of a few advanced designers, the influence has been largely reciprocal. (Fig. 4).

Present day modern Dutch designers will acknowledge only slight indebtedness to Germany, the fact being that they have studied the work of the modernists of all countries and have based their new architecture less on the style evolved in any one country than on the principles which lie at the root of modern design—that is to say, a return to basic fundamentals of composition particularly the study of plastic form, line and silhouette.

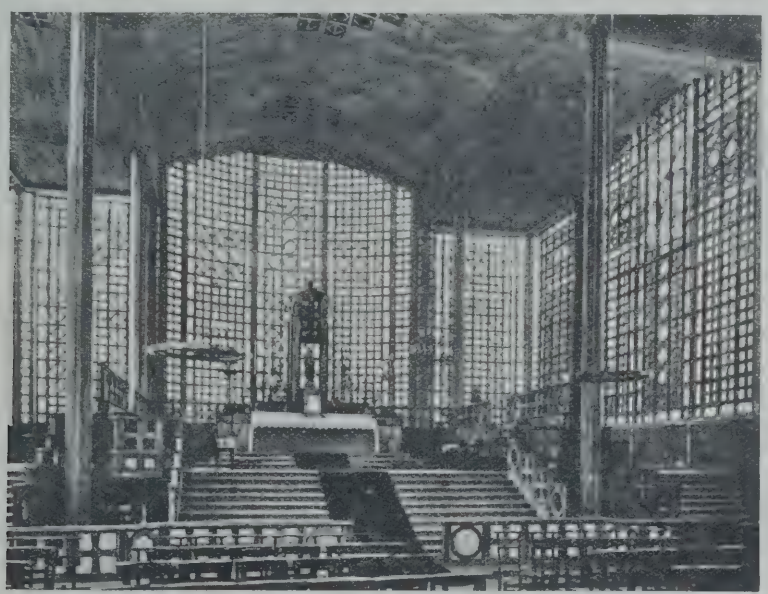


Fig. 2.—Church of Notre Dame du Raincy, near Paris, Interior. Architects, A. & G. Perret

The modern Dutch architecture is characterised, first, by great beauty of material, chiefly brick and tile, combined with the studied use of colour, and by excellence of technique in execution. The second characteristic is breadth of treatment, combined sometimes with a certain starkness, at other times with effects bizarre and fantastic. The post-war buildings of the extremist school are exceedingly cleverly composed, free from the somewhat amateurish tentativeness of modern English work. The proportions are always interesting. They are not negative, as ours too often are ; and the eccentricity is often merely the result of an over-anxiety to stress these proportions. The extreme plastic phase has been largely sobered by a more

Fig. 3.—The "Chile House," Hamburg. Architect, Fritz Höger

Fig. 4.—Private House in Brussels. Architect, Josef Hoffmann

simple and direct cubism, and this in turn is being mellowed and humanised by a lessening of rigidity and the reintroduction of some of those typically Dutch characteristics which make the architecture more homely and national than cosmopolitan.

The Dutch have, temporarily at any rate, discarded the classics; their return is to the first principles of abstract design rather than to the first principles of any style.

In Holland's near neighbour, Denmark, on the other hand, an evolution has been in progress in which there appears to be, on the part of the younger men, a definite research in the first principles of certain styles, or at least influences. It has seemed to me, in the latest Danish buildings, that the architects were in a sense trying to solve modern problems in the way that the Greek mind would operate if it were applied to a modern day set of conditions. It is an effort, as it were, to get inside the Greek skin and study Greek intellectual processes in their modern application.

The result is seen in buildings which cannot be said to bear any of the usual Greek hallmarks. They are not, as in America, miniature Parthenons, nor do they depend for their effect on Greek characteristics or mannerisms. They merely suggest a modern problem solved with the restraint and refinement of the Greeks, partaking a little of Greek monotony and suffering, too, from the slight effect of feebleness which is so often apt to accompany great delicacy of form and subtlety of detail in a northern climate. The fat robustness of Wren is probably more effective in rain and fog than the delicacy of a Callicrates.

Great simplicity of general line, the elimination of all ornament which has not a direct value, and the absence of any robust joyousness make up in some of the new Danish work a compound not yet satisfying but highly encouraging in the sense of marking a definite step in a direction which is not haphazardly chosen. Great attention is paid to the psychological effect of a few elements well treated; and quality, not quantity, is the keynote. To my mind the lesson of the modern Danish work lies in its dainty avoidance of the vulgar and the commonplace, and the undoubted backing which it has of a cultivated and intellectual research which is, however, only the handmaid of originality and invention. The Town Hall in Copenhagen, a building which never succeeded in founding a school, is, however, a remarkable achievement whose influence, as is so often the case, has been felt more abroad than in Denmark. There are few English buildings of its date which can begin to compare with it (Fig. 5).

FIG. 5.—THE TOWN HALL, COPENHAGEN. Architect, Martin Nairop

FIG. 6.—THE LILJEVALCHS MUSEUM, STOCKHOLM. Architect, Carl Bergsten

FIG. 7.—STATE WINE DEPÔT IN STOCKHOLM. Architect, Jacobsen

FIG. 8.—DOORWAY TO SWEDISH LEGATION, HELSINGFORS. Architect, M. Grut

A small but significant point which struck me in comparing modern English and Danish design was brought out by a visit to a shop making electrical fittings. I saw there designs which were charming and original, many of them created by young architects. The proprietor of this establishment informed me that he had just received the latest catalogue of what is probably the best known electrical fittings manufacturer in England, and that the designs it contained were practically the same as those contained in a catalogue which he had received from them twenty years ago !

Modern Danish work has been greatly influenced by the Danish Wren, C. F. Hansen, who has carried the classical tradition to a high pitch. His work is not being imitated, but his mastery of proportion and refinement of detail are carefully studied ; a certain coldness so often inherent in purely classical design is the chief drawback to this influence, which may partially account for the Danish failure to grasp the full possibilities of colour. In this matter they are far behind the Dutch or their near neighbours, the Swedes.

It is of modern Swedish architecture that I wish particularly to speak as an instance of a very highly cultured artistic development. The exhibition of modern Swedish work last spring was an eye-opener to many of us. It was not that we felt that the Swedes had discovered a modern style that was a universal panacea, but rather the impression was that the best Swedish architects were working on a plane generally distinctly superior to our own. In their mastery of the effects of proportion, in their deft touch in general grouping and in matters of detail, there is nothing of the amateur. The finish of design in some of their best buildings makes a great number of our ambitious modern efforts seem rather immature and commonplace.

In so many of our buildings the proportions seem to be more or less correct, but produce the curious effect of not seeming very much to matter. The character, as it were the physiognomy, of our buildings do not seem to derive greatly from their proportions. We have arrived at convenient spacings and divisions vertical and horizontal, and we obtain our character by filling up the gaps and dipping into the classical brantub for detail. The Swedes, on the other hand, play upon their proportions to produce major design effects, and they cap these effects with a piquant relief of detail which is nearly always intrinsically interesting.

The new Town Hall at Stockholm is already familiar to us, at least by hearsay. It is immensely interesting as a civic emblem of a great seaport capital, and technically it is surprisingly thorough in conception and working out. Such matters as the lighting have been very deeply considered ; Professor Östberg has managed beautiful effects in his rooms, which are always filled with well-diffused daylight but in which the spectator is never blinded by a direct glare. The lighting of the great Blue Hall—so called, the architect explained, because it is all in red brick—is perfect ; and yet it was a daring thing to depend solely on this great clerestory. It was intended to make these clerestory windows without glazing bars, producing an uninterrupted band of light, but in the immediate post-war period the big sheets of glass were unobtainable

In the Town Hall Professor Östberg has designed the most completely and finely studied modern building I have ever seen. Each detail bears his impress, as do the details of the Paris Opera the touch of Garnier. In the Opera people say that everything is in the same taste, and what a pity it is that it is all bad ! But in the Town Hall the taste, regardless of personal preferences in style, is everywhere faultless. The Town Hall took twelve years to build, and Professor Östberg told me that for every week of those twelve years he fought with his committee a daily battle. So even in Sweden the architect does not recline on velvet.

The younger school of Swedish architects prefer to the romantic blending of the Town Hall a more chaste and rigid version of Greek spiced with Empire and flavoured with a dash of Italian sauce. It is not, perhaps, a fair or precise description, for in reality these younger men are doing like the Danes, returning to first principles of design and working on broad lines which, on the whole, are concerned rather with the spirit than the letter of scholarship (Figs. 6, 7 and 8). They pick and choose amongst past traditions, but the mass is studied less from considerations of style than from those of logic and æsthetics. The Swedish romantic tradition of mediævalism is even seen blended with a fully flavoured touch of baroque, a feat from which the skill of the designer in the harmonising of form takes away any semblance of conscious effort.

A feature of the modern Swedish phase is the large number of competent young artists, painters, sculptors, who seem to be available to co-operate in the decoration of buildings of all sorts. Even quite modest private houses—those of architects, for example—have painted ceilings and little sculptured embellishments (Figs. 9 and 10). It would be hard to find anyone in England beyond the most famous (and expensive) to execute work ofthis type. And even then I do not think our design sense is sufficiently alert to cope with the idea successfully. We are too stereotyped, and lack flexibility. In the design of furniture it is the same story ; it is hard to name more than one or two firms in England who are engaged in the making of any furniture other than the reproduction of the antique.

Swedish students of architecture are taught to work much by the model, and tricky draughtsmanship, including the Academy type of perspective, is at a discount. In addition, the Swedish student has a very thorough practical training and generally passes through a technical school wherein are studied the processes of building before he enters upon his career of architecture proper.

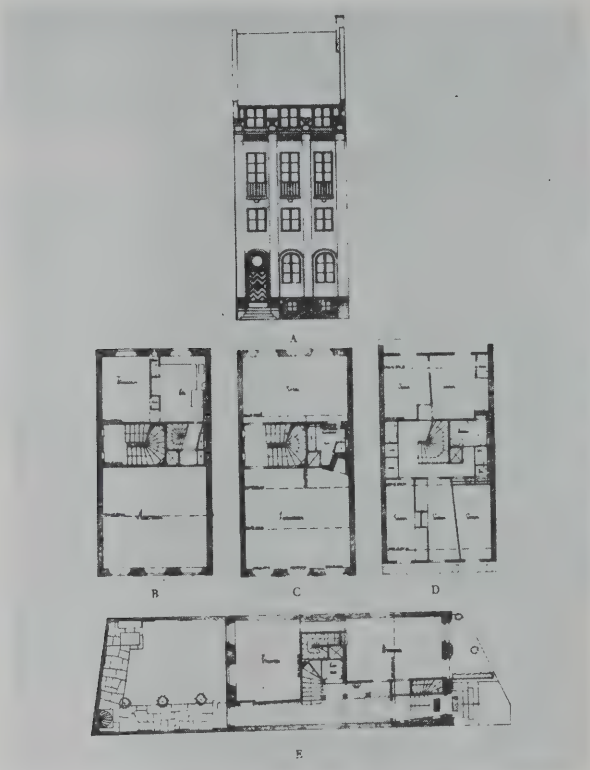


FIG. 9.—HOUSE IN STOCKHOLM OF PROFESSOR ERIC LALLERSTEDT, ARCHITECT

The lesson of Swedish architecture, to my mind, lies in the importance of the study of abstract design and its application to architecture, coupled with an intelligent analytical study of old work. The process of blindly measuring without understanding of why good things are good is our weakness in England. We do not sufficiently use the mind to assist the eye.

Lastly, I will touch on Finland, the architecture of which is little known save through the name of Saarinen, whose design for the Chicago Tribune building and scheme for the Lake Shore development have caused such favourable comments here and in America. Saarinen's greatest building is his railway station in Helsingfors (Fig. 11). Its basic influences may derive from Germany, but in fact he has evolved in all his buildings the style which he thought most suited to his building's purpose and expression. He cannot conveniently be labelled as other than modern, in the sense of being a designer obviously familiar with the antique but free from any slavery to classical formulae.

Finnish work varies greatly in quality. The bad examples are inspired by art nouveau and the Munich beerhouse style, while the best springs from the principles which inspire men like Saarinen.

To sum up, I would say that the lesson of the North for us lies in the fresh impetus to the power of design and a cultivation of invention and resource. Freedom from slavish reproduction does not mean an ignorance or disrespect of tradition. But by cultivating originality of thought and attempting to look forward to the future rather than always back towards the past may be avoided the degradation into which fall all great styles of architecture when they are no longer kept alive by the spirit and conditions which brought them into being. The spirit and conditions of to-day are not those of Greece and Rome in the Middle Ages, and we must develop our art accordingly.

FIG. 10.—INTERIOR OF HOUSE OF PROFESSOR LALLERSTEDT (LIVING ROOM) SHOWING PAINTED WOOD CEILING

"Modern Architectural Colour"*

BY L. H. BUCKNELL [*A.*].

THE architect of to-day is realising more and more that colour is an important factor in his work. In spite of much talk in recent years and a certain amount of research work, colour decoration is still in a somewhat nebulous state. I hope you will not ask me to define "modern," but I will say at once that I do not mean "jazz." This distressing word has already led to much confusion and should be quietly buried.

It is unfortunate that decoration has to some extent become separated from architecture. Such separation has given us the "Period Rooms," "Period Furnishings," etc., to the detriment of architectural progress. Architecture embodies many things, most of which we treat seriously as a matter of course. Practical requirements, construction, finance and so forth, but decoration is equally important if we are to consider the spiritual and æsthetic effect of architecture as much as its material safety and convenience.

An architectural conception is only a complete unity when all the component parts are considered relatively. If decoration becomes a matter of painting on form designed without relation to colour, the result can only be painted form, which generally means the usual architectural forms in a new dress, whereas if form and colour are considered as one the result may be of greater artistic value and more originality. We need more collaboration in the fine arts if we are to achieve success, a collaboration which already shows signs of development.

We should be nearing the end of the period of vast areas of plain white plaster and dull woodwork. In the Stockholm Town Hall there is an excellent example of the collaboration of artists in the production of a great artistic unity, an architectural conception with fine mural decoration in fresco, mosaic, painted pattern, and finely conceived and placed sculpture. We cannot plead poverty for our lack of these things, unless it be perhaps poverty of imagination. We spare nothing in our lavish use of stone and stone carving, though often much might be spared, to the improvement of the exterior and the greater embellishment of the interior.

This is a matter for the architect to control. It is not sufficient for him to call in the furnishing firms to install their "period trappings." That unhappy phase we have had long enough, and if we are to get away from it we must take it into our own hands as architects. Our buildings must be conceived as a unity and not as shells to be decorated, and since an architect cannot know all things perfectly, he must endeavour to know sufficient to obtain and control the collaboration necessary to the perfect development of his ideas.

Much could be done with our civic buildings not only in the form of permanent decoration but in temporary decoration by the use of great painting and sculpture. These things are not only for the museum and picture gallery, and there are sufficient examples to form changing decoration for such buildings. Such a scheme would be a source of interest and inspiration, an aid to the development of civic pride and possibly a broader interest in affairs.

Our public buildings must be made more open to the public if such interest is to be encouraged, and if these buildings are suitably adorned a great educational work could, I believe, be accomplished.

We have heard much talk in recent years about external colour work, the brightening of our streets and so forth, but so far our experiences have not been very elevating, due partly, probably, to lack of broad conception and insufficient consideration of conditions, suitability, etc. A series of buildings of varied form and colour—like textile pattern—cannot, I think, add dignity to our streets, or even brightness. Multiplicity of colours will sufficiently neutralise the effect aimed at and produce only restlessness and uncertainty. Such use of colour, too, is not the natural expression of our temperament.

If we are to use colour in street architecture we must first of all consider the natural and climatic conditions. Many of our streets are already beautiful in the colour of weathered stone and mellowed brick. We have that much abused article soot to consider, though even this at times can give us wonderful velvety blacks. These are limitations, but limitations which might be productive of ideas.

It would seem that we must consider fine colour as we do precious jewels—to adorn and not to confuse, to be used preciously in fine settings, and, from a practical point of view, where they can be properly cared for. There is more joy in a well-placed, finely conceived piece of carving against a suitably simple background than in a mass of carved detail; so with colour, a choice spot will have more effect than an all-over pattern or confusion of detail. We place our rich notes of ornament to give emphasis to particular points; so we can with colour, and I believe with greater effect than if colour is indiscriminately smothered over great areas. Such ill-considered use of colour leads to the risk of undue emphasis, to a competition between individual adjoining properties, eventually to a sort of chromatic squabble. This is to be avoided. One can imagine that in those black cities of the mining areas the blackness might be turned to account as a background for colourful spots of interest.

An important point to consider is the relationship of colour and form. These are really inseparable, and to put fine colour on poor form is to emphasise only the poorness of the form. There are many details in our streets which could, were it not for this, add greatly to their cheerfulness. We have a heritage of lamps, bollards, kiosks and shelters which are better neutralised by indifferent colour, though they might, as I hope future ones will, add to the amenities of our cities by their fine form and colour. Our shopkeepers might do more by the use of bright sunblinds in the place of those murky hues we are accustomed to. We owe something

*A Paper read before the Liverpool Architectural Society.

to our buses and trams ; many of these are of excellent colour, and our cities look almost sad when strikes deprive us of them. With the extraordinarily rapid growth of our towns we must come to some sort of agreement to achieve harmony in the streets if we are to avoid complete chaos. The latter has already happened in form, and if we add colour indiscriminately our confusion will be complete.

The modern shops in the streets of Paris are excellent examples of civic dignity and individual taste. The sky lines and surfaces, the general effects are simple and restrained. The shops, on the ground floor only, are treated to express the individuality of the businesses, and these are often superb in quality and colour. Rich marble, mosaic, finely coloured terra cotta, enamels and paint are all used with judgment and with charming effect.

What Paris has done we should be able to do.

In Holland, sign posts, shelters, etc., have arrived at beauty of form and colour. Again, what Holland can do why cannot we ?

As our traffic develops we shall get more and more of the street conveniences, traffic signals, refuges, sign posts, bus and tram shelters, etc., and we should see that these are better handled than in the past.

Internal Colour.—With interior work we have fewer restrictions than in external work, but of the many conditions " suitability " must be regarded as vital. This may seem a very unnecessary remark, but most people are familiar with many instances of the abuse of such condition. There is a natural temptation for the colour enthusiast to " stunt " or to gain his experience and maturity at the expense of many errors.

This, of course, does not apply only to colour, but it is more noticeable since our interest in colour is fresh. We are, I think, nearing the end of the early experimental period and are developing a more mature vision and appreciation of colour. We have got over that first childlike or savagelike joy in brilliant raw colour, and look for greater things, but we must be guarded, in searching for greater subtleties, against those errors of weakness and timidity which can only lead us to that period of neutrality from which we have recently escaped, " The Edwardian." The errors of our early experiments were the natural outcome of the dinginess of this period, a revolt against it. A period of heavy crimsons, stale greens and chocolates.

In our search for better things we shall look for those practical and æsthetic qualities which colour may possess —expression, suitability, fitnesss, character and so forth.

Suitability and fitness may be the most easily achieved. It will include suitability to conditions, to purpose, and to people.

The decoration of buildings used for short intervals will not need such subtlety of treatment as those in use for long periods—*e.g.*, a cinema or casino may have a more exuberant scheme of colour than a living room.

Every building must be a special case, and though buildings may be broadly divided into sections, each section will have many sub-divisions. It may be true to say that the public rooms of an hotel may be more gay than those of a private house and less wild than a cabaret, but there are many grades of hotel, and what will suit one may be very unsuitable in another.

Expression and character are more difficult, being more subtle, and we have to study carefully and with imagination the circumstances and people involved.

This will apply particularly to domestic work and to those buildings where the expression of emotion or ideals is an essential factor as in a church.

In schools, where the class-room occupies many hours of the child's day and has a great influence in the development of his character, carefully chosen colour might be of inestimable value.

One cannot imagine an atmosphere of varnished pitch pine and stone colour paint being helpful or adding pleasure to instruction. This is a matter which needs more attention. Children are extremely responsive to colour, and it seems a pity that opportunities for its use are so rarely taken or made.

In domestic work the field of study is almost unlimited ; although nearly all people see the principal colours similarly, they are not all equally affected, some natures being much more responsive to colour than others.

Certain colours will delight some and irritate others, and the effect of colour on the people concerned must be studied before a suitable scheme can be conceived.

The character of rooms, too, must be taken into account. A drawing or dining room may be bright and cheerful, a bedroom reposeful. We are too used to making our dining rooms heavy, ponderous affairs—one of the causes of nerves at breakfast. Since feeding is a necessity, we might make it pleasurable and surround it with light and a reasonable cheerfulness.

We get so little sun that the possibility of some compensation in colour should be explored. Colour can give much which our climate lacks, and if it cannot produce sun it can at least provide brightness and cheer.

The value to health of light and brightness needs no proof. During the war some experimental work was carried out in hospitals to study the effect or curative value of certain colours, with, I believe, good results. How far this has developed since I have been unable to discover. Amongst the doctors with whom I have discussed it I have found none who have used colour, though all have regarded it with interest. I presume that there are, of course, some whose opinions and experience would be of great value, but I have not had the good fortune to meet them.

Colours have similar effect on the majority of people, but with varying intensity according to their degree of responsiveness to colour. They have many qualities—repose, stimulus. They may be rich and vibrant or gloomy and onimous, delicate or strong, but the effect they have will depend on their use.

Yellow at one time was referred to as a bilious colour, not, I presume, because it had that effect, or it would not have been so popular as in recent years. It can be a wonderful colour with the brightness of sunlight and spring flowers, or the richness of amber and gold. No one ever called a daffodil bilious. It is a colour to be used cleanly and according to its quality and hue may vary from the ultra æsthetic to the joyfulness of

" Scheherazade." The yellow room will depend, apart from the quality of the yellow, upon the supporting colours. Lemon yellow used with mauves and turquoise may provide too rare an atmosphere, but a rich golden yellow with oranges, violets and fine blues may, on the other hand, be too stimulating. Obviously it must always depend upon the personalities of the occupants of the rooms decorated and of the light value of the rooms. I am inclined to think that always a room should have one dominant note ; that on entering a room one should never be conscious of a " colour scheme," but only of a sense of pleasure ; that if strong supporting colours are used they should be confined to incidental details, and the stronger the colours the smaller these details.

A richly coloured Chinese vase is a joy in almost any room, but the same colours used in the same proportions on a large area would have a very different effect.

Green, *blue* and *red* have all been accused of having baneful effects. Green " enervating," blue " mournful," red " of exciting the worst human passions." All these epithets obviously need considerable qualification.

Green can be enervating, but certain strong hues may be distinctly stimulating. It is a difficult colour, and certain heavy yellow greens should, I think, be entirely avoided as leading colours. On the other hand, a pure apple green can be very beautiful. The value of the blue greens we know from the many fine Georgian examples.

Blue is another difficult colour ; it may vary from the mournful to the rich heraldic and royal blues, or be of those curiously fascinating Persian and Chinese hues. It is a colour to be used boldly in noble apartments, but needs very great care if used in small rooms. One can imagine in a large room a wonderful Persian or Chinese blue with rich golden hangings and parquet floor ; a parchment coloured ceiling with hints of purple, blue green and emerald ; brocades or cut velvets to echo the general colour so far from being mournful, being very rich and regal.

Red—the colour of passion and war, but also the source of liveliness and joy. Bakst and Lovat Fraser have shown us how wonderful red can be. On the other hand, some Edwardian dining rooms have shown us how terrible.

It is, I believe, a colour to be used sparingly but full, with all its life and vitality. I have seen a room of dull crimson and grey green which to me was maddening. I also know a room with a quiet warm grey, a Chinese hanging of crimson vermilion, a dull gold frieze, a pillar-box red picture rail and ivory ceiling, and it is delightful. Red has greater intensity than other colours, and for this reason should be used in smaller areas.

It is curious how much we neglect ceilings. For years we have been satisfied with a chalk-like finish, yet in the past the ceiling has been one of the glories of a room. It may be due to our modern low ceiling. A low ceiling will not stand heavy colours ; but many of our large public buildings have high ceilings, and would, I think, be greatly improved by colour, however simple.

Before closing there is one matter out of many in the use of colour which is all-important. The question of " distribution " or proportion.

As architects we are familiar with " proportion," the relation of the parts and the harmony of the whole. With colour it is similarly important. However perfect a selection of colours may be, if they are ill-proportioned or, as it is better described, badly disposed, the result will be disastrous. This " disposition " is the most difficult of all the problems in colour, and only constant practice will bring success. We have to arrive at the same sense of proportion in colour as we have in form.

It is not a matter of taste any more than is any other form of æsthetic expression, but owing to the infinite number of combinations is more difficult to reduce to a formula.

I would recommend to your notice a really excellent book with a simple colour theory, *Colour*, by Barrett Carpenter, and one on *Color and Its Application*, by M. Luckiesh.

Review

THE STORY OF ARCHITECTURE THROUGHOUT THE AGES. *P. Leslie Waterhouse* (*Batsford*, 6*s*.).

This excellent little book is a revision and enlargement of Mr. Waterhouse's earlier work. The chief additions to the letterpress are the amplification of the section on Pre-Hellenic Greece, and the two chapters on Modern Architecture, which are largely fresh matter. The book is entirely re-illustrated with photographs and many excellent drawings.

It is addressed to the student and the general reader, and is written in a clear, interesting style, many points being accentuated by quotations from general literature. Mr. Waterhouse has shown a fine appreciation of the desires and difficulties of the lay reader, and the technical information he gives is sufficient to stimulate interest and curiosity. Possibly in the section on Roman Architecture more might have been made of the primary constructional significance of the arch. The lay mind does not immediately grasp its use in spanning wide spaces, obvious though this may be to the serious student. The Romanesque and Gothic sections are admirably done, particularly in their insistence on the transitional character of the whole period. It is perhaps a pity that no great Gothic interior except King's College Chapel is illustrated, and in the next section the need is felt of something more than the plan of St. Peter's, Rome, although the illustrations generally are carefully chosen.

All these, however, are small points compared with the high standard of the whole work, which is particularly noticeable in the wide sympathy and impartiality of the two last chapters. The book may be heartily recommended to all who desire some general knowledge of architecture.

M. Dickens Whinney.

Waterloo Bridge

DEPUTATIONS TO THE LONDON COUNTY COUNCIL'S SPECIAL COMMITTEE ON THAMES BRIDGES

BEFORE the meeting of the London County Council on 24 February, at which the reconstruction of Waterloo Bridge was to be considered, two deputations, one representing the Fine Art Commission and the other the Royal Institute of British Architects, the Town Planning Institute, the Architecture Club, the London Society, and the Society for the Protection of Ancient Buildings, were received by the Special Committee on Thames Bridges.

THE ROYAL FINE ART COMMISSION

The representatives of the Royal Fine Art Commission were the Earl of Crawford and Balcarres, Mr. J. Alfred Gotch (P.R.I.B.A.), Sir George Frampton, R.A., and Mr. H. Chalton Bradshaw, Secretary of the Commission.

LORD CRAWFORD'S SPEECH

In addressing the Committee Lord Crawford said :— We are very much obliged to you for receiving us. I introduce the deputation from the Royal Fine Art Commission. The Sub-Committee appointed consists of Lord Curzon, who has to attend a Cabinet meeting this morning and cannot come, my colleagues Sir George Frampton and Mr. Gotch, President of the Royal Institute of British Architects.

We ask you, Sir, and your Committee to consider the propriety of a further delay, a revision of the decision which we understand has been reached that the bridge should be destroyed and replaced by a new structure. The importance of the bridge is incontestable. We are speaking, of course, you will understand, from the point of view of æsthetics. I do not suppose that any advocate of the destruction would differ from that opinion. We think, however, that nobody would have recommended the destruction of this bridge and its replacement by a new one had it not been for the structural defect which has recently been revealed, and public opinion, so far as I can estimate it, is deeply disturbed by the prospect of demolition. I should like to say in two or three words what we feel actually about its artistic importance to London. One has only to go to the exhibition now on view at the South Kensington Museum to realise that almost from the day of its opening this bridge has been looked upon by artists and scholars as a great achievement of the metropolis, as something which artists of the highest distinction have always tried to reproduce, to make better known, and from which they themselves clearly have drawn inspiration. It is the only bridge in London which possesses a name of real British importance—a name, in other words, which is not localised or territorialised—and I go still further and say that it is probably the only monument in London of the nineteenth century which commands world-wide admiration. The nineteenth was a great century in our history, but here in this vast city we have got only one monument which the world acknowledges to be great, were it in any country, or were it an achievement of any date. There is one other great building in London, a magnificent and famous building, which might also be considered a monument of world-wide importance, but that certainly is not universally acknowledged. Waterloo Bridge, however, stands out as the only possession of the Londoner in the world of architecture which corresponds to its greatness in many other walks of life throughout the nineteenth century. In itself it is a magnificent structure, most notable perhaps in the extraordinary distinction of its junction with another great building of an earlier date, namely, Somerset House. The unity of treatment between that magnificent façade on the river and that magnificent line crossing the river is an architectural achievement which is universally admitted. So tremendous is the artistic and architectural importance of this bridge that I for one would even advocate its rebuilding stone by stone rather than let it perish.

I ask your Committee to consider whether we can afford to lose an asset of that character. There are lots of buildings which, owing to public improvements, have from time to time been threatened in London, but which on further consideration have been allowed to remain. A classic example of that in recent times is the case of St. Mary-le-Strand. At one moment that church was doomed, it was in the way, it had to go ; but your predecessors, Sir, reviewed the original decision to destroy that church and not only did you preserve the church, happily, but in doing so you made an extraordinarily useful traffic improvement. Will you forgive me for saying that the impression left upon the public mind by the procedure in relation to this scheme is that you have acted with excessive promptitude. We talk about erecting a new bridge in London and we talk about it for 25 years before we do anything, but your decision to destroy this bridge was only announced on 20 January, and so I say, and I ask you to forgive me for doing so, that the impression left upon the public mind is that sufficient effort has not been made to consider all the possible alternatives.

May I add one word about the procedure adopted. I have had the advantage of seeing the report drawn up by yourself about this bridge, and if I may, I would like to comment on one paragraph in that report, the paragraph which is attracting so very much attention about the attitude of the Institution of Civil Engineers. I will read the words on page 43 : " If it had been possible to maintain by any means the existing structure, we think the Council might well have been willing to sacrifice a valuable traffic improvement to the preservation of so beautiful and famous a bridge. But that we now know on the highest authority to be impossible. The Council of the Institution of Civil Engineers in its letter of 14 January, 1925, states its view, given after most careful consideration, that the Council would be well advised to act on the considered individual opinion of Mr. Basil Mott, C.B., and the late Sir Maurice Fitzmaurice, F.R.S. These experts, as the Council will remember, reported strongly against the possibility of preserving the existing structure by means of underpinning, thereby confirming the advice of the Council's Chief Engineer." It seems to me that we may be almost engaged in a gigantic misunderstanding. The " most careful consideration " by the Institution of Civil Engineers is referred to. I ask myself—what did they most carefully consider ? They did not consider the structural problem, they did not consider the question of underpinning, of grouting, of reinforcing. They appointed no Sub-Committee to go into the technical problems, they invited no evidence, they asked for no opinion from people who have devoted every hour of the day to this problem since the first sagging of the bridge began. I submit that the " most careful consideration " given by this Council was not to the structural and to the engineering problem, but to the question of procedure and, I would almost say, to the question of etiquette. In one portion of their letter that is almost indicated. They told you that your Authority has acted wisely in taking advice from qualified people and that you would do well to accept the advice as given to you. They never condemned the bridge, they did not say one word against the proposals which had been made by other engineers. For all that I know, some members of that Council actually believe that the bridge can be safely strengthened by underpinning or other processes, and, to tell the truth, I really don't know what else those gentlemen could have said. Naturally, being a body of professional men, they would be loath to disparage the advice given to you by their own very distinguished colleagues. Now, on behalf of my Commission, I ask for a respite. We submit with great respect that the whole problem should be re-examined, I might almost say freely examined, by a body appointed *ad hoc* for the first time, and we submit this to you, Mr. Norman, with greater confidence for this reason, that we do not think our proposal need involve any very serious delay. Your officials have already collected a mass of data, measurements, records, diagrams of thrusts, and a hundred and one other valuable sources of information upon which any expert committee could judge with a minimum of delay. It is not as though we asked that you should appoint people who would begin a survey lasting six, eight, twelve months. You have got all the materials at your disposal already and the enquiry we suggest would start with the initial advantage of this invaluable data. We want, in short, to press that the whole question of stabilisation should be re-opened.

There is one other point, too, we should like to be reconsidered. I may be wrong, but my impression is that this particular point has not been considered by your Committee. At any rate you have made no public pronouncement upon it, and it is this. You have stated, Sir, in your report that you have got a general and a provisional scheme by which the northern end of Waterloo Bridge should have appended to it a tunnel, a subway under the Strand—a very interesting suggestion. We should like to know if that subway would be combined with the existing bridge, if that problem has been examined. If it were possible, I have no doubt that that in itself would multiply the carrying capacity of Waterloo Bridge by 50 per cent., or at any rate by a very appreciable figure. In any case, the public implores you to reassure it upon a matter which is really causing intense anxiety, a matter about which the London public, always slow to pick up facts about itself, is really to-day beginning to be effectively alarmed, and we submit that the only way to reassure the public that your policy is dictated by the positive exigencies of the situation is by having a further enquiry based upon the information you would put before a new committee, taking into account all these facts, and not least of all the one which impels my Commission to approach you to-day, namely, the incalculable æsthetic value of the bridge.

THE R.I.B.A. AND OTHER REPRESENTATIVE BODIES.

The deputation was composed of Mr. Arthur Keen and Mr. L. H. Bucknell, representing the R.I.B.A. ; Sir Richard Paget, Professor S. D. Adshead, and Mr. W. R. Davidge, representing the Town Planning Institute ; Mr. Ewart G. Culpin, Mr. James Bone, Mr. E. Vincent Harris, and Mr. J. C. Squire, representing the Architecture Club ; Mr. Ernest Herbert and Mr. D. Barclay Niven, representing the London Society ; and Professor W. R. Lethaby and Mr. J. F. Green, representing the Society for the Protection of Ancient Buildings.

MR. ARTHUR KEEN'S SPEECH.

Mr. Arthur Keen (Hon. Secretary R.I.B.A.) said in effect the deputation were speaking for the great body of instructed architectural opinion throughout the country. First, they wished to say (what he thought was now almost common ground) that they could hardly overstate their sense of the value of Waterloo Bridge as a great national monument of outstanding beauty and interest. They knew of no finer bridge, no bridge as fine as this anywhere ; it was a masterpiece of architectural form and engineering skill, dignified, vigorous, and impressive, and at the same time graceful and refined. The responsibility of the Council as the custodian of such a monument was a very grave one, as they probably realised very fully, and he submitted that they should safeguard the bridge with jealous care. They were trustees of something which he regarded as a most valuable asset. Next, with great respect, they dissented from, and, indeed, disputed emphatically, the statement appearing in this committee's report to the effect that the bridge must be considered to be a worn-out structure. Very far from being a worn-out structure, with proper repair and ordinary care for its foundations it was probably the most enduring and permanent building in London. Certainly its design and material both showed that no limit could properly be set to its length of life.

Again, they said that in their view the communication sent by the Council of the Institution of Civil Engineers to the London County Council did not bear the interpretation set upon it in the committee's report. It was put forward as evidence that strengthening the bridge by underpinning was not feasible. What it actually said was that it was not within the province of the Council of the Institution to give a technical opinion on such a matter, and it went on to say in effect :—" You have able engineers ; be guided by them ! " which he submitted was a very proper reply, and one that did not commit the Council to an opinion which many members of the Institution might challenge or repudiate. The deputation were there as people who understood building ; they were concerned with it every day, and they knew something of the possibilities of dealing with heavy structures. From their own knowledge and experience they were satisfied that there was no insuperable difficulty in underpinning and strengthening the foundations of the bridge. That view was borne out by competent engineers and reliable contractors, and therefore, as that difference of opinion on an absolutely important point existed, they asked that before anything was done towards taking down the bridge an independent inquiry into the matter of underpinning should be made. That was an absolutely important point, because the whole question turned upon it. They thought they were entitled to ask that, not only because they were artists interested in the beauty of London and the preservation of its finest monuments, but also because as citizens they did not wish unnecessary expenditure on a large scale to be incurred. He suggested that if the bridge were private property no one would dream of rebuilding instead of repairing it.

They recognised that the whole matter of London bridges and traffic was complex and the difficulties great that the committee had to cope with ; they were sorry to embarrass the committee with rather insistent opposition on a particular point, but they regarded the matter as so important that they could see nothing for it but to oppose the destruction of the bridge with their utmost efforts. He had nothing to add except to put before the committee the resolution adopted by the bodies that they represented :—

" This conference is not satisfied that Waterloo Bridge is worn out and should be destroyed. It therefore recommends that the question should be referred to an independent expert committee to determine (after hearing evidence and taking such advice as they may require) whether the bridge can be underpinned and made strong enough for modern traffic for many years to come. In the event of such independent expert committee reporting that underpinning is practicable, this conference is of opinion that the underpinning should be proceeded with, and provision for the increasing cross-river traffic made elsewhere, as would have been done if the sinking of one of the piers of Waterloo Bridge had not occurred."

Mr. W. R. Davidge and Mr. J. C. Squire took part in the subsequent discussion.

THE L.C.C. AND THE DEPUTATIONS.

The London County Council, at the meeting which followed the reception of the deputation, adopted the recommendation of the Special Committee on Thames Bridges on Waterloo Bridge. This was to the effect that the present structure should be taken down and reconstructed.

In moving the adoption of the report, the Chairman of the Committee, Mr. R. C. Norman, referred to the visit of two deputations, one from the Fine Art Commission and the other from the Royal Institute of British Architects, who stated a case against the demolition of the bridge. The deputation had been assured that no stone would be removed until the temporary bridge was erected in July, and that, in the interval, should any further considerations arise, which might upset the experts' report, upon which the Committee had based its decision, the recommendation could be reviewed.

L.C.C. REPORT ON WATERLOO BRIDGE.

Reports by the Chief Engineer to the Improvements Committee and letters received from the Society for the Protection of Ancient Buildings and other bodies and persons on the subject of the reconstruction of the bridge:

The documents relating to the Waterloo Bridge matter are contained in the L.C.C. Report dated 10 July 1924 and marked S.O. 370. They are too long to be reprinted here, and they include a drawing of considerable size. There is a copy in the Institute Library.

The size of the piers of the bridge above the footings is 77 ft. by 20 ft., and the scheme prepared by Mr. Harley H. Dalrymple-Hay, the engineer consulted by the Society for the Protection of Ancient Buildings, is briefly as follows. The pier is first surrounded by steel sheet piling driven down into the London clay to a depth of about 2 ft. below the new foundation and tied at the top to the masonry of the pier. The space between the piling and the masonry is filled up with Stamshaw clay in bags bedded

and well rammed in, so as to prevent compressed air from escaping. An access shaft 6 ft. in diameter, lined with steel and provided at the top with an air lock, is formed down the centre of the pier and a narrow heading is driven along the centre line of the pier at a depth of 5 ft. below the top of the clay; compressed air is used to keep out the water. From the central heading lateral excavation is carried out between the old timber piles to the necessary depth into the clay and everything is removed up to the level of the underside of the solid masonry : this lateral excavation extends both ways from the central passage outwards to the sheet piling, and is done in narrow widths, piece by piece, until the whole area of the foundation has been dealt with. The excavations are filled in with concrete and brickwork pinned up tightly under the masonry with slate wedges, and finally the central heading is filled up with concrete. The access shaft can be at the end, outside the pier if necessary, instead of in the middle.

It is pointed out that this scheme can be carried out at relatively small cost as compared with rebuilding ; that the time occupied would be relatively short and that the waterway between the piers would be left free. The scheme has the support of two well-known engineers possessing wide experience of bridge work, and it has been studied by four important contracting firms who find nothing of unusual difficulty in it and are quite prepared to carry it out.

Report of Special and Business General Meeting

Monday, 2 March 1925

The Development of the Western End of the Strand

THE PRESIDENT (MR. J. ALFRED GOTCH) IN THE CHAIR

The PRESIDENT :- Mr. Owen Fleming [*A.*] has given notice that at this meeting he proposes to invite attention to recent and impending architectural changes in the neighbourhood of Charing Cross Station and to move a resolution—I will now call upon Mr. Fleming to move his resolution.

Mr. OWEN FLEMING [*A.*]: I feel that to-night I must begin with an apology that at a time when our attention is fixed, and rightly, on the eastern part of the Strand, I should have to ask you to consider the western. But the Strand must be treated as a whole, and to me the developments in the Strand, connected closely as I have been with them for a good many years, seem almost in the nature of a drama. It is really very interesting to trace the development of what I may call the architectural influence upon the great changes that have taken place in the Strand. I would invite your attention first right back to the establishment of the London County Council because it was at that date that our position in this matter was really established. The County Council was called into existence rather hurriedly at the beginning of the year 1889, and as soon as it was established the newspapers of London began a " raging, tearing propaganda " for the destruction of the Strand churches. Their ideal was a straight Strand from Fleet Street to Charing Cross. St. Clement Danes and St. Mary-le-Strand stood in the way. They had to be abolished. This Institute in March 1889 sent a letter to the London County Council, and I had the honour of moving a resolution on behalf of the Architectural Association pointing out the great architectural importance of the church of St. Mary-le-Strand. Those resolutions went to the L.C.C. in March of that year ; they fell, fortunately, into the hands of Lord Rosebery, and he saw that in the succeeding month of April, when the reference went from the L.C.C. to the Improvements Committee, it had in it a saving clause that the churches should, if possible, be preserved. That was our first step, and I think it has been more or less a key to all that has happened afterwards.

The next step was in the year 1896. Those seven years had been occupied by the Improvements Committee in considering numerous plans for the straight way we now know as Kingsway, and the schemes had been sifted and compared and estimated, so that in 1896 the Improvements Committee, under, I think, the chairmanship of Mr. Frederic Harrison, brought forward a scheme recommending that Kingsway be brought to the church of St. Mary-le-Strand, with two arms going right and left. That was the old danger in a new form, and this Institute referred the matter to the Art Committee because they thought it was an incomplete scheme, and the Art Committee referred it to a small sub-committee, of which, I am afraid, I am the only member still alive. Alfred Waterhouse was our Chairman, and among other members were John McVicar Anderson, John McKean Brydon, Edward W. Mountford and Alfred Gilbert, the sculptor. This Sub-Committee made a plan abolishing the proposal to arrange a straight route down from the north of London against the church of St. Mary-le-Strand, and they prepared the scheme that has actually been carried out. It went to the L.C.C. after receiving the approval of the Council of this Institute, was considered carefully by them, and in 1898, when Mr. Shaw-Lefevre, now Lord Eversley, was Chairman of the Improvements Committee, that Committee of the County Council recommended this Institute scheme, with a small modification on the Strand side, for approval. It is important to note the opinion the Improvements Committee held at that time as to the proper status of architectural opinion on these questions of city planning. They say, on 5 July 1898, " After most full and careful consideration of a variety of competing plans, we have unanimously decided that the best is that recommended by the Improvements Committee in 1895, modified in accordance with the suggestions of the Royal Institute of British Architects, and with some alteration proposed by us." They bring up again the question of the churches, and they say, " When it was suggested that the County Council should cause the church of St. Mary-le-Strand to be removed the proposal was received by the

public with indignation." I think we hear to-day of another proposal which has also been received by the public with indignation! "Moreover," they go on, "several powerful architectural societies in London strongly urged upon the Council the retention of the building. We entirely share this view. London has suffered materially in the past from the fact that when main thoroughfares have been constructed too little importance has been placed on the value of architectural effect." They finish up: "It must be clear that in the present instance a bold scheme will prove to be the truest economy." What does that mean? You have seen the scheme of Kingsway and Aldwych carried to a conclusion. I am afraid I have not got the figures of the actual cost, but I will give you the official estimate—it was something like £700,000 net. And that, worked out in the form of rates, was 0·226d. in the £, or less than a farthing, during the period in which the loan has to be redeemed. If, therefore, the great Kingsway and Aldwych improvement has been effected at a cost to London of less than a farthing in the £, we have every reason to congratulate ourselves on its public economy.

Now, Sir, when that scheme was prepared by the Institute this attack on Waterloo Bridge was foreseen. Therefore in the application to the County Council, the R.I.B.A. pointed out that the eastern arm of Aldwych was so designed as to admit later on of an extension across the river to the Elephant and Castle. In 1898 when this scheme came up the Improvements Committee used these words: "It has been suggested to us that our scheme to be complete should provide for an extension of the proposed new street by means of an approach across the Thames between Waterloo Bridge and Blackfriars Bridge. But this question does not fall within our reference, the provision of such a bridge being a matter for the consideration of the Bridges Committee. We have therefore thought it right to do no more than arrange that the line of the new street shall be such as will easily lend itself to any possible future extension of the street by means of a bridge across the river." That report went to the Council in 1898 and was adopted unanimously. If this question of the underpinning of Waterloo Bridge, and the question of finance, I suppose, had not arisen, I have no doubt that that scheme would have been carried through, and that from the Gladstone Statue to the Elephant we should find a magnificent street, also of 100 ft. width, making a main connection between the north and the south of London. The chief main streets of London now run east and west. There is no real north and south road. But if that little piece were joined, from the Gladstone Statue to the Elephant, we should collect the whole of the streets of South London which converge at the Elephant, and join them on to Kingsway and Southampton Row, right up to Hampstead. That is the obvious and clear position for that bridge, and I very much regret that this "red herring" of Waterloo Bridge has come across the path. A year or two later, in 1903, the American Institute of Architects asked that the guiding principles of the R.I.B.A. plan should be explained to them, and I have looked up the words that were used in Washington—words carefully chosen—"The new street is designed to enable the northern traffic to ascend by the western arm of the crescent while the southern traffic descends by the eastern arm. They (that is, the Institute) feared that if some scheme such as this were not carried through a most serious attack would be likely to develop against Waterloo Bridge owing to its inadequate width." That was written 22 years ago and read in Washington. This attack has developed, and it has taken the form of an inability to execute some works of underpinning.

I do not want to go into this question to-night, but Mr. Norman, in his letter to *The Times* has practically abandoned the position of the letter from the Institute of Civil Engineers. He says in effect, "We do not rely on that. What we do rely on is the report of Mr. Basil Mott and Sir Maurice FitzMaurice." Extended search through various files pertaining to the matter, and through the minutes of the L.C.C., have failed to locate that report. I submit that report should be seen, and if it is available I ask that that report may be printed in our Journal so that members all over the country may see and weigh the "reasoned arguments" advanced by these engineers in favour of the destruction of Waterloo Bridge. And with that, Sir, may I also suggest that the letter of Mr. Edward Bazalgette that appeared in *The Times* a day or two ago might be printed. Mr. Bazalgette knows a great deal about the subject. He is the son of the distinguished engineer of the Embankment, Sir J. W. Bazalgette, and in 1882-4 it was his duty to provide a screen in front of the piers to prevent scouring. Sir Reginald Blomfield, in his first letter to the "Times," says that the reason for the subsidence is the scouring. Mr. Bazalgette says that that can hardly be a material element. If that is not the reason, what is? Mr. Bazalgette gives certain weights that are of importance. He says that the dead load on those piers is from 10,000 to 12,000 tons per pier. I have not had the advantage of seeing the piers on plan, but from a rough calculation I assume that they are something like 800 square feet, and if so that would give a dead load of some 15 tons per foot, which is rather large, and as the foundations are of timber there is some possibility that these timber piles should be reinforced by concrete piles or in some other way. But it seems almost childish to be obliged to controvert the thesis seriously placed before the County Council that the combined intellect of the great profession of British engineering is unable to underpin a few small masonry piers. I hope, Sir, architects may have an opportunity of studying the two reports in detail.

Personally I feel that public opinion is opposed to the destruction of Waterloo Bridge, and if the County Council has to go to Parliament I feel certain that Parliament will reject the proposal. If rejected, we are back again at the position the Institute took up in 1898 when they sent up the scheme to the London County Council that a new bridge must be made. Where is that bridge to be? Is it to be on the line of the Temple or at Charing Cross or both? Many of us feel that, great as is the commercial necessity for the Temple Bridge, there are also advantages in the Charing Cross scheme. If the South Western Railway had held its hand and had not spent so much money in putting the new Waterloo terminus in a position where no one can see it, it might have been

possible to have had a great joint railway terminus facing the Thames and axial with a wide bridge connecting Charing Cross and Waterloo. That would have been undoubtedly a magnificent scheme which would have enhanced the beauty of London. But Waterloo Station is where it is, and a great war has been fought, and a heavy debt is upon us, and the railways are in a difficult time. The railways have had to take five millions out of reserves this year to pay their normal dividends. It is true that the Southern Railway has not had to weather such severe storms as the other three, but I do not think that this is the time in which the Southern Railway will look with any great pleasure on a scheme to drive them back to the southern side. I gather from a rather cryptic question that was addressed by Sir Robert Perks to the Chairman at the meeting of the Southern Railway Company last week, that he at least is none too pleased with the idea. Moreover, I believe that Craven Street belongs to the Southern Railway, and there may be ways of getting what they want without going back across the river. One would like to see the high-level scheme carried through, but the chances seem to me against its present commercial possibility. But can we therefore fold our hands until it does come ? I think not ; and that is why I have put the motion on the paper.

In the first place, you have seen the alignment of the Lyons Corner House, the very awkward angle at which it is placed along the edge of Craven Street ; on the other side you see the line of the new Tivoli and the building erected on the site of Coutts's Bank. You will see that the L.C.C. are promoting a Bill to give them powers over the south side of the Strand right away up to Villiers Street. These are the things we know. We can see Lyons Corner House, we can see the building on the site of Coutts's Bank. Now, will the Strand traffic be content to go bang up against the side of Charing Cross forecourt ? I do not think it will. But what will happen ? I cannot say. If there is some agreement arrived at between the County Council and the railway company, I presume it will mean that the forecourt will be cut off, that the Strand will go through at that line, and the houses between Lyons Corner House and the forecourt will be cut off. Well, that is certainly not a plan we can regard as architectural.

But there are worse things than that. From the appearance of the property on the north side of the Strand it seems to be contemporary with Regent Street and Waterloo Place, and the time cannot be far distant when these properties will be rebuilt. If those properties are rebuilt on their present foundations any change will be so costly as to prohibit it from being carried out. Therefore it seems to me that now is the time when we must act. How should we act ? This is a most difficult problem, more intricate even than that of Aldwych, because, I think, other authorities may have to come into this matter. The cost of property has gone up very much, and the County Council may well say that Aldwych was all very well, but Charing Cross—is that so much so ? From the report of the Bridges Committee one may imagine them replying that the scheme may be a good scheme, but is the London ratepayer going to pay for it ? And if the London ratepayer is not, who is going to pay for it ? I do not want to go into financial questions at this moment, but I submit one point. We have fought a great war. That war has shown that when England and the Empire are in danger all parts of the Empire flock together to defend it. There is no outward and visible sign that I know of in London showing clearly in a concrete form our gratitude for or recognition of that fact.

Charing Cross happens to be the gate of London. It is more or less the Continental gate, and if it is not the actual overseas gate—Waterloo being much more so—yet by a small line brought from Waterloo on to the Charing Cross line it would be possible for the important trains from Southampton to be brought into Charing Cross. If that forecourt were arranged in an architectural manner, with large groups of statuary representing the different Colonies, I am not at all sure that the Colonies would not take a practical interest in the matter. I cannot say more than that. But I would say that any scheme of this sort should be brought in some way or other to the notice of our Colonies and to the Government also, and I believe that if it were a reasonably good architectural scheme—not a fairy scheme running into millions—it could be carried out.

I do not propose to-night to indicate how it can be done. There are many ways of doing it. Our strength in East Strand has been due to the fact that we have had one plan on which we were all agreed and which we have consistently pursued, and we ought to have such a plan for the West. That plan might be made, as was the other, by a Committee, or we might even suggest an architectural competition to show how it could be done, or we might go still further and remember that there are such places in the Empire as Montreal, Melbourne, Wellington, Sydney, Capetown and Calcutta, and have an Imperial competition showing how Charing Cross can be developed. But all I want to do to-night is to invite your attention formally to the irregular configuration of Lyons Corner House and to the L.C.C. General Powers Bill that is now before Parliament, and I would ask you to refer it to our Council to consider the whole matter in a broad spirit in whichever way seems best to them.

The PRESIDENT : We have listened with extreme interest to what Mr. Fleming has said. He has put the case with great skill and knowledge of his subject, and the matter is now open for discussion. As far as I am personally concerned, I am afraid I shall have to go to catch a train. I will ask Mr. Walter Cave to fill the chair in my absence.

Mr. WALTER CAVE then took the Chair.

Mr. J. ERNEST FRANCK [*F.*] : I shall be very happy to second Mr. Fleming's resolution, and before speaking on it I wonder if you could tell us whether the Council have decided to take any action.

The CHAIRMAN : The subject has been discussed, and the idea of a competition has been considered, and I will ask the Secretary to read the report of the Town Planning Committee which has been adopted by the Council.

The SECRETARY then read the following :—

REPORT OF THE TOWN PLANNING COMMITTEE.

Strand Improvement.—On 16 February the Council requested the Committee to interview Mr. Owen Fleming [*A.*] with regard to his notice of motion at the General

Meeting on 2 March and his suggestion that the R.I.B.A. should promote a competition on the lines printed on the Council Agenda Paper for 16 February.

The Committee have discussed the matter with Mr. Fleming. They consider that the time is opportune for a competition dealing on the broadest lines with the future development of the Strand and Charing Cross neighbourhood, but they do not favour one of the rather limited nature which Mr. Fleming suggests. Mr. Fleming's scheme appears to indicate the permanency of a railway terminus on the present site of Charing Cross Station and does not include in the proposed competition the preparation of schemes for a new Charing Cross Bridge or for future development at the eastern end of the Strand. Such a competition as Mr. Fleming suggests would not, in the opinion of the Committee, be in the best interests of the object which the R.I.B.A. have at heart—namely, the construction of a new road bridge at Charing Cross, and the replanning of the areas of approach thereto.

The Committee do, however, consider that the London Society and the Town Planning Institute might be approached with a view to joint representations being made to the London County Council in favour of a great competition being promoted by the latter body, for schemes which include all aspects of the future development of the Strand and Charing Cross area, and the Council are recommended to adopt this course.

Mr. EDWARD WARREN [*F.*] : May I, as a member of the Council and also of the Town Planning Committee, say that, after one of the most interesting meetings of that Committee I have ever attended, we all thought—the decision was quite unanimous—that any competition held for dealing with so important a portion of this capital city as Charing Cross should not be a small competition of the kind which this Institute could promote by itself, but should be held in conjunction with the London Society and the Town Planning Institute, and should be, if possible, promoted by the London County Council. The question should be dealt with on a broad basis and with a view to the future. I do not think that anybody who really has at heart the final distribution of the area lying about Charing Cross can contemplate with any degree of composure the permanent existence of Charing Cross station and the railway. We all felt that any great scheme must accept the removal of Charing Cross station to the south bank of the river, and that Charing Cross as a great imperial centre should be treated on an imperial basis. We were all in sympathy with Mr. Fleming's suggestion that this should be regarded as an imperial centre—the gate by which not only our own people but foreign visitors enter London—and that room should be made by the removal of the station and the poor little forecourt for a really grand distribution of the end of that ancient thoroughfare the Strand where it converges on Trafalgar Square. If you grant that, that the competition should be initiated on broader lines and for a larger distribution than Mr. Fleming has proposed, you have to admit, as Mr. Fleming has suggested, that the contemplated expenditure must be greater. But, gentlemen, when you consider what London is, the largest capital city of the world, that it is the centre of an Empire which spen seven or eight millions every day upon the war, canno that Empire face an expenditure equal to one day of th war for improving its imperial centre ?

The railway would have to be heavily compensated of course, for removal to the other side of the river, an no doubt there would be a burden which the ratepayer of London would feel ; but it seems to me that we ough at once to recognize the principle that any improvement in London, the capital city, are not merely local im provements, and that the incidence of cost should no really bear only upon people dwelling in the are improved. We ought to recognize that the capital cit is an affair of the whole country, and not merely that o those who happen to dwell in it. Therefore a Parlia mentary vote of national money for the developmen of the capital city is fair and reasonable. Every Britis subject has an interest in the capital city, which is th representative centre of the whole Empire.

If you grant that premise you will grant that it ough not to be particularly difficult to find the necessar money for a great improvement which would allow roo for the suggestions of Mr. Fleming for the representatio of sculptural groups in that centre. In any case, what ever the scheme may be, we felt that the competitio should be on very broad lines, and that competitor should not be hampered by too many restrictions, tha they should feel that there was a margin within th reasonable limits of which they could plan for an improve ment on a really grand scale. Of course, the formatio of a new and fine bridge at Charing Cross and th removal of the railway to the southern side connote other things. It connotes the disappearance of th poor block of buildings on the north side of the Stran in a line between Charing Cross station and St. Martin' Church. It also connotes a high-level bridge bringin the traffic across the existing streets. St. Martin's-in-the Fields—the church—must be respected, but a certai curtailment of the churchyard is at present contemplate and appears to be inevitable. I am not going to occup your time by any discussions of the details, but I conten that the competition should be on a great scale and no hampered by too parochial conditions, that is to say, i Lyons's Corner House or anything else stands in the way it should be removed. This great Empire and its capita city should find the money for such a scheme, and i initiating a competition we need not be hampered to closely by considerations of cost.

Mr. D. BARCLAY NIVEN [*F.*] : I think that Mr Fleming and the Council of the Institute are both to b congratulated, Mr. Fleming for having initiated th proposal and the Council for having taken it up so whole heartedly. I am very glad that the London Society an the Town Planning Institute are to be asked to par ticipate, and that the L.C.C. are to be given an oppor tunity to launch this important proposal. The grea thing is to approach the consideration in the largest way It is really an imperial matter. Proposals put forwar in a niggardly or parochial manner usually fall flat, bu an appeal to the imagination of the people of this country as in the case of Liverpool Cathedral, St. Paul's Cathedra or Westminster Abbey, always elicits an immediat

esponse. There is no lack of money in the country vhich will be poured forth for a worthy object. London s the capital of the Empire and every year it draws an ncreasing number of tourists and sightseers. It is mportant that the Centre of London should be developed n a noble way. I therefore welcome the proposal for n imperial competition for the ultimate development if the western end of the Strand, coupled with a fine road ridge over the river and with a great road from the outh to the north—this road to go either under or over he Strand, and such other lateral roads as Oxford Street nd Euston Road. I hope the Special Committee will et going very soon, and that the proposal receives mmediate and favourable consideration from the L.C.C.

Mr. J. ERNEST FRANCK [*F.*]: Mr. Fleming, I nderstand, would not be averse to the road bridge at Charing Cross, but he rather thinks that the L.C.C. would e deterred by the cost, and therefore proposes a minor cheme to deal with the railway station as existing. It comes back to a question of finance. The cost of Kingsway nd Aldwych works out at less than ¼d. in the £ on the ates. But against that it is forgotten that there are added ates to the local authorities. I have had a similar expe-ience when acting for a Borough Council in a public im-provement. The L.C.C. must be receiving a larger con-ribution from the City of Westminster and the Borough of Holborn. It is all very well to say that these things cost noney; they really pay the authorities. I think these points should be stressed to the L.C.C. The Council should be urged to take a big view with regard to the bridges. Per-sonally I think we want also the bridge on the eastern arm of Aldwych. I believe that the Ministry of Transport are very keen on having the St. Paul's Bridge, and that they would not favour anything which would affect that scheme. But I quite agree that the plan that was put down many years ago for the development of the eastern arm of Ald-wych should be carried through just as much as Charing Cross Bridge. They are both needed.

On the question of Waterloo Bridge, something has to be done. I believe the L.C.C. can deal with it without going to Parliament. I think it should be the duty of this Institute to have, before the elections come along, a public meeting for the purpose of focussing the attention of the whole of London on this subject. It is the duty of the In-stitute (it does not matter what it costs them) to call a public meeting, at which they could readily have some dis-tinguished speakers, like Lord Curzon, for instance, and the Earl of Balfour—it is not a question of politics, but a question of a historic and architectural heritage that ought to be preserved. I think the Council should hold that meeting so as to endeavour to keep Waterloo Bridge intact.

Mr. W. J. H. LEVERTON [*Licentiate*]: Mr. Fleming referred to a report sent in by the County Council engi-neers. I was talking about it only this evening to a friend of mine, and he said that efforts had been made to get a copy of this report and it could not be obtained.

The SECRETARY: We have a copy here, Sir.

Mr. ARTHUR KEEN [*F.*] (Hon. Secretary): I have been immensely impressed by what Mr. Fleming has been telling us about what happened in 1898 and the proposal to extend the improvement from the eastern arm of Aldwych as far as the Elephant and Castle. It is also interesting to be reminded that the County Council adopted the report of the Improvements Committee of that time unanimously. The other day there appeared in *The Times* a letter from Mr. Austen Hall on the subject of Waterloo Bridge, but the important part of that letter was omitted. Mr. Hall sent me a copy of the letter, and the essential part of it was to the effect that this was not a time for destroying bridges in London but for building them. He said they need not be afraid of increasing the number of bridges, because it would not be long before double the present number of bridges would be required, and that the policy of the London County Council ought to be in favour of crossing the river wherever possible I believe he is absolutely right in this. The part of central London north of the river is becoming crowded out, and everything points to the fact that before long the southern side of the river must be linked up much more intimately with the northern. Mr. Thomas Collcutt had a scheme for carrying an important bridge across the river, that was not merely a bridge in the ordinary sense, but an actual street, with shops and houses, so that people should not realise that they were crossing the river. His view was that with open bridges you would never get the necessary connection established be-tween the north and south. One almost trembles to think of the architectural effect, but I believe he was justified in his contention that such a method would be effective.

I have listened with great interest to what Mr. Fleming has said, and it appears to me at the end of it all that, for one thing, there is not room enough where Charing Cross station now stands for a great railway station. Charing Cross station is a very inconvenient and inadequate one, and I do not see the possibility of increasing it to such an extent on its present site as to make it really suitable for the terminus of Continental traffic. Therefore I think everything points to the desirability of somehow shifting the railway station to the south, and setting up an adequate connection between it and all the traffic of the north side of the river. I think that the bridge at the eastern end of Aldwych is almost as essential as the other one, but the thing to concentrate on at the moment is the saving of Waterloo Bridge, and probably the wisest thing for the immediate future is to get the Charing Cross Bridge dealt with in a proper and comprehensive way. I wonder whether Mr. Fleming would withdraw his particular motion, and accept the one adopted by the Council this afternoon, in favour of joint representations being made to the County Council with a view to getting the whole question made the subject of a very big and important competition. I am sure he would have the unanimous support of this meeting if he would do so.

Mr. OWEN FLEMING: I am very much impressed by the discussion that has taken place, and particularly by the speech of Mr. Warren, who has brought before us the fact, which has always been in my own mind, that this is an Imperial as well as a London question. If the resolu-tion of the Council would permit of further action in the event of the L.C.C. declining to accept the Council's proposal to hold this competition, I should entirely agree. There is such a body as H.M. Government, and there are such gentlemen as the High Commissioners for the Colonies. If you could assure us that if necessary the Government and the High Commissioners would be taken

into consultation I shall be very happy to withdraw my resolution in favour of the proposal of the Council.

The CHAIRMAN: Certainly, I can give that assurance. That was the feeling of the Council to-day.

Mr. FLEMING: Then I propose what the Council has put forward—That the London Society and the Town Planning Institute be approached with a view to joint representations being made to the London County Council in favour of a great competition being promoted by the latter body, for schemes which include all aspects of the future development of the Strand and Charing Cross area.

Mr. D. BARCLAY NIVEN seconded.

The CHAIRMAN put the resolution to the meeting, which was carried.

Correspondence

AVOIDANCE OF REFLECTION IN PICTURE GALLERIES.

To the Editor JOURNAL R.I.B.A.

DEAR SIR,—In view of the interest and importance attaching to this subject I have for some time had it in mind to submit a simple suggestion to your readers in the hope that it may be useful, or that, if it contains some defect, some one will be good enough to point it out. It is not my wish to undervalue or set aside in any way the work done in investigating the best form of top light for a gallery; but my suggestion may perhaps be of service in overcoming defects in a good many existing galleries.

It has been stated that glass must reflect something; and though this sounds pessimistic it is at least a safe working assumption. Our aim must, therefore, be so to arrange matters that what the glass reflects will not mar the observer's enjoyment of the picture.

Let us assume a fairly high gallery with top lighting of any form; and let the pictures be so hung that none of them has any part of its glazed surface more than nine or ten feet above the floor. If in such a gallery the whole of the wall surface above the pictures were an unbroken surface of a dull grey hue or black—or, perhaps even, white—it should be possible, whilst keeping the picture surface vertical, to arrange the plane of the glass at such an inclination that for an observer in the proper position the glass would reflect some part of the even upper surface of the wall opposite and that only. This reflection would be quite unnoticeable, because—whatever subtle effect the reflection of such a surface might have on the general tone of the picture—the whole area of the picture would be subjected to a uniform influence. For pictures below, or on the level of, the eye this would involve fixing the glass in a frame of such form that the lower edge of the glass would be further in front of the picture surface than the top edge would be.

The most difficult case to deal with would be that of a very large picture occupying the whole of the nine or ten feet of height available as hanging space. A solution, however, which suggests itself is to har the picture near a corner of the gallery and fix th glass vertically but obliquely on plan so that the en wall of the gallery would be reflected. This wa would then assume the uniform sombre tint require and, of course, could not be used as hanging space- or at any rate not in that part of it which would b liable to be reflected.

Small pictures near the floor line would need very pronounced tilt for the glass if the upper pa of the opposite wall were to be reflected. It migh however, be simpler in such cases to allow the gla to reflect the floor which could be finished in a jointles material of the tone and tint found most suitab to neutralise reflections. An alternative to this migh be found in disposing these small pictures in a cor tinuous wall case having its glass front inclined the angle necessary to reflect the top part of the wa opposite. This would probably be less unsightl than having a number of separate distorted frames.

My suggestion is then that certain surfaces whic cannot cause offensive reflections should be provide and that the glass protecting the pictures shoul (quite regardless of the plane of the picture) be s disposed as to reflect only some part of these inoffensiv surfaces. The principle is the same for all cas though in application much diversity of form may b necessary. The position from which any pictu must be observed in order to benefit by the gla inclination adopted would be found quite naturall or in a second or two of subconscious trial and error, b any observer.

I have not included a diagram or sketch so as not t encroach unduly on your space. I think my propos which is of the simplest will be sufficiently intelligib without such aid.—Yours truly,

JOHN H. MARKHAM [*F.*]

VICTORIA AND ALBERT MUSEUM.

ASPECTS OF WATERLOO BRIDGE.

A group of paintings, drawings and prints showin views of Waterloo Bridge from its opening in 1817 t the present day has been placed on exhibition the Victoria and Albert Museum. The exhibits, whic are mainly from the Museum collection, include tw sketches by Constable of the Thames-side showin Waterloo Bridge, and his brilliant oil study, based on o of the sketches, for his large picture of "The Opening Waterloo Bridge." Among other exhibits are a wate colour drawing by Clarkson Stanfield, R.A., and sever drawings and prints showing different aspects of th bridge and its surroundings. Special interest attaches four designs made by Thomas Sandby, R.A. (1721–179 the architect, brother of Paul Sandby, for a propose bridge at Somerset House. Some etchings by Sir D. Cameron, Mr. Muirhead Bone and Mr. James McB have been kindly lent by Mr. Campbell Dodgson, C.B.E and Mr. Martin Hardie, R.I., R.E.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS AND THE SOCIETY OF ARCHITECTS.

An official intimation has been received from the Privy Council Office that the King was pleased, at the Council held on 6 February, to approve the grant of the Supplemental Charter prayed for by the Royal Institute of British Architects.

The agreement made last year between the Royal Institute of British Architects and the Society of Architects accordingly comes into force, the admission of the members of the Society of Architects into the Royal Institute will take place forthwith, and a very important step in the unification of the architectural profession with the object of promoting a Registration Bill will have been completed.

THE ROYAL GOLD MEDAL FOR ARCHITECTURE.

At a General Meeting of the Royal Institute of British Architects on 2 March, Sir Giles Gilbert Scott, R.A., F.R.I.B.A., was elected by the members, and his name will be submitted to His Majesty the King as a fit recipient of the Royal Gold Medal for Architecture for the year 1925.

In the event of His Majesty graciously signifying his approval of the award, the Medal will be presented to Sir Giles Gilbert Scott at a meeting on 22 June.

SIR JOHN J. BURNET, R.A.

The congratulations of members of the Institute will be cordially extended to Sir John J. Burnet on his recent election as a Royal Academician.

CAMBRIDGE SCHOOL IN ARCHITECTURE.

Degree Conferred on Mr. Theodore Fyfe.

On 28 February, in the Senate House, Cambridge, the complete Degree of Master of Arts (*honoris causa*) was conferred on Mr. Theodore Fyfe [*F.*], Master of the University School of Architecture.

Mr. Fyfe was appointed as the first whole-time Master by the Board of Architectural Studies in the summer of 1922, so that he is nearing the completion of the third year of his work at Cambridge. During this period the School of Architecture has practically doubled in numbers, and there are now 43 students, 39 of whom are taking the full course.

ST. PAUL'S CATHEDRAL.

Commission of Experts' Final Report Adopted.

At the meeting on 3 March of the Representative Committee for the Preservation of St. Paul's Cathedral, on the proposal of Sir Charles Morgan, seconded by Canon Newbolt, it was resolved "That the final report of the Commission of Experts should be adopted." [The report was received by the Committee at its meeting on 16 February.]

On the motion of the Bishop of London the following resolution was also carried. "That having adopted the final report, the Committee do not propose to ask other experts to give independent advice."

The Dean (Dr. W. R. Inge) was voted to the chair, on the motion of the Archbishop of Canterbury, seconded by the Lord Mayor, and there were also present the Bishop of London, Canon Newbolt, Canon Alexander, Canon Simpson, Archdeacon Holmes, Lord Oxford and Asquith, Colonel Sir Charles Morgan, Sir John Mullens, Sir Lewis Dibdin, Mr. Basil Mott, Mr. G. W. Humphreys, Mr. E. C. Trench, Mr. Mervyn Macartney, Mr. C. Stanley Peach, and Mr. H. T. A. Dashwood (secretary).

RECORDS OF VANISHING BUILDINGS.

The R.I.B.A., realising that in many parts of London buildings of architectural merit are being or are about to be demolished, is desirous that photographic records of such buildings should be secured.

In many cases members of the Institute may possess information regarding little known works which has not come within the knowledge of the Institute or other interested societies, and any information or preferably photographs which members can supply to the R.I.B.A. will ensure that some accessible record of these will be retained.

It is hoped that at some future time it may be possible for the Institute, with the assistance of other societies, to obtain and house properly a representative record of London work which is so rapidly disappearing.

LECTURES ON FAMOUS LONDON BRIDGES.

Three public lectures on Famous London Bridges will be given under the auspices of the Departments of Architecture and History of University College (London University), Gower Street, in the Botanical Theatre, Gower Street, at 5.30 p.m. as under :

9 *March*. "Old London Bridge," by Miss E. Jeffries Davis, M.A., University Reader in the History and Records of London.

16 *March*. "Bridges and Designs for Bridges," *c.* 1702-1862, by Professor A. E. Richardson.

23 *March*. "Some Other Bridges," by Professor A. E. Richardson.

Admission free.

THE LAW RELATING TO THE ARCHITECT.

The Council of the R.I.B.A. desire to direct the attention of members to the valuable book entitled "The Law Relating to the Architect," by Mr. A. H. M. Brice, Barrister-at-Law.

The book is published by Messrs. Stevens & Sons, Ltd., 119 and 120 Chancery Lane, W.C.1. (Price 10s.).

THE IDEAL HOME EXHIBITION.

An Impression.

It is a little difficult, after a very hurried visit to Olympia, to write an adequate appreciation or criticism.

Generally speaking, what strikes one on a first survey is that this Exhibition is quite as interesting as any previous Ideal Home Exhibition, and is very much better organised—in fact, one might, without fear of exaggeration, describe it as a " triumph of organisation." There is none of that sense of confusion and not being able to find one's way about which characterised some of the earlier exhibitions.

Possibly the most interesting exhibit from the architect's point of view is Sir Edwin Lutyen's beautiful little pavilion which encloses the Queen's Doll's House.

I do not know whether the peculiar smell experienced inside is due to the preservative used on the wood for the stands, etc., or whether it is some strong disinfectant against the prevalent 'flu, but if it is as effective as it is nasty it ought to be very good.

One of the most delightful sections is that containing the gardens. Many of these are extremely well designed and have interesting adjuncts in the way of old wrought iron gates, etc.

The technical exhibit which will possibly cause most interest and comment amongst architects is the pair of Braithwaite's steel houses. These are extremely well planned and extraordinarily interesting from a constructional point of view. Messrs. Braithwaite have approached the problem as would a shipbuilder rather, by making a steel frame and then clothing it. The general principle seems to be strong steel plates bolted together to form a rigid carcase, these forming walls and roof. Inside the walls are finished with asbestos sheeting and some form of patent boarding for the ceilings. The outside is painted a pleasant putty colour—but I very much doubt as to what extent these houses are rust resisting—and it would be extremely interesting to learn how the paint can be maintained for so small a sum as £1 per house per annum, which is a contention that Messrs. Braithwaite make. From the design point of view, the only feature that I do not myself consider to be entirely satisfactory is the treatment of the roof. This has been designed and painted to look as much like a red tiled roof as possible, with the result, of course, that it looks like a bad imitation. If the designers had been as consistent with the treatment of the roof as they were with the walls, and followed, say, on something of the lines of the roof to a tube railway carriage, the result would possibly have been more convincing.

Some of the designs for the individual stands are particularly good, depending as they do on simple shapes and strong colour effects.

S. C. R.

NEW PAINTINGS IN THE CHAPEL AT WEMBLEY.

In connection with the Wembley Exhibition this year the Chapel in the Palace of Arts is to be re-decorated and Mr. Laurence's painting representing Service and Sacrifice is to be removed.

As the result of a competition amongst young painters a work by Mr. Colin Gill representing " Early Colonists," or " They that go down to the Sea in ships," is to take its place. A design by Miss Mary Adshead which was submitted in the competition was highly commended by the judges, Mr. George Clausen, R.A.; Mr. Charles Sims, R.A.; and Professor Rothenstein, and she has been invited to execute a painting on the west wall.

Mr. Colin Gill is a Prix de Rome Scholar and it will be remembered that he recently exhibited at the Academy a picture of Venus and Cupid which was a delightfully fresh rendering of this subject.

Miss Mary Adshead, who is the daughter of Professor S. D. Adshead, is a Slade student who has recently distinguished herself by executing some remarkable wall paintings at the Memorial Hall, Shadwell, in a free treatment of the pre-Raphaelite style.

GARDEN CITIES AND TOWN PLANNING ASSOCIATION.

Lectures for March, 1925.

A series of five lectures will be held on the undermentioned dates, with the object of getting together the London district members of the Association, and acquainting them with the progress which is being made in the movement. It is evident that by one means or another a very considerable number of houses must be built in the next few years, and the fact that the national conscience is responding and is demanding that action should be taken makes it more important that our members should have sound, informed judgment upon the subject.

The lectures will be held in the Class Room, Gray's Inn (by arrangement with the Benchers of Gray's Inn), at 5 p.m. on each day. 4 March—" The Housing Acts of 1923 and 1924 and their Administration," by Captain R. L. Reiss; 11 March—" Public Utility Societies and Housing by Private Enterprise," by Mr. E. G. Culpin; 18 March—" Housing in European Countries," by Captain R. L. Reiss; 25 March—" Town-Planning in Greater London and the Slum Problem," by Mr. W. R. Davidge, F.S.I., M.T.P.I.; 1 April—" The Basis of the Garden City Movement, with Special Reference to Letchworth and Welwyn," by Mr. C. B. Purdom.

The lectures will be free to members of the Garden Cities and Town Planning Association, and tickets can be obtained for non-members at 5s. for the course, or 2s. for each single lecture. Application should be made to the Secretary, Garden Cities and Town Planning Association, 3, Gray's Inn Place, London, W.C.1.

Annual Dinner.

In connection with the 26th annual meeting, the Garden Cities and Town Planning Association have arranged for the annual dinner to be held on Tuesday, 10 March, at 7.30, at the Criterion Restaurant, Piccadilly. The Minister of Health, Rt. Hon. Neville Chamberlain, M.P., has accepted the invitation to be the chief guest, and it may be anticipated that important statements may be made with reference to town planning and garden cities.

The Garden Cities and Town Planning Association would be pleased to invite members of the Institute to the dinner, and tickets may be obtained at 15s. each. Application should be made to the Secretary, 3, Gray's Inn Place, London, W.C.1.

ARCHITECTS' BENEVOLENT SOCIETY.

Scheme of Insurance.

In view of the interest shown by architects in the Scheme of Insurance, the Council of the Architects' Benevolent Society have recently secured the help of an advisory committee of insurance specialists.

The Architects' Benevolent Society is now in a position to answer enquiries on every class of insurance business, whether concerning existing or contemplated policies, and is ready to give considered advice on all such questions.

THE USE OF THE LETTERS A.R.I.B.A.

Referring to the law case, The R.I.B.A. *v.* Hindle (see *Journal*, p. 236), which was recently tried by Mr. Justice Tomlin and in which the Institute asked for an injunction, which was granted, to restrain Mr. Hindle from using the letters A.R.I.B.A., to which he was not entitled, after his name, the application of the Institute to make the injunction perpetual came before the Court again on 3 March, and the judge made an order directing Mr. Hindle to be perpetually restrained and also to pay the costs of the proceedings.

THE MOSQUE "EL AKSA," JERUSALEM.

In the article by Mr. William Harvey on the Mosque El Aksa, the gift of the drawings with which the article deals was attributed to Colonel Storrs, the Governor of Jerusalem, whereas the presentation was made by Dr. Kemal ed Din, the architect responsible for them. We much regret the mistake and take the earliest opportunity of making this correction.

In the Annual Supplement, however, of Additions to the Library, Dr. Kemal ed Din was acknowledged as the donor of the drawings.

ALLIED SOCIETIES.

At the Annual Meeting of the Tees-side Branch of the Northern Architectural Association held on the 27th ult., Mr. T. W. T. Richardson, F.R.I.B.A., was elected Chairman of the Branch in succession to Mr. C. F. Burton.

LIVERPOOL ARCHITECTURAL SOCIETY.

The annual dinner of this Society will be held at the Adelphi Hotel, Liverpool, on Friday, 13 March, at 7.30 p.m. The Lord Mayor of Liverpool and Mr. J. Alfred Gotch, P.R.I.B.A., have promised to attend, and other distinguished guests are to be invited.

Messrs. B. T. Batsford's list of Spring announcements includes the following :—

Old English Household Life. Some account of country objects and country folk. By Miss Gertrude Jekyll. With 250 illustrations. *Chinese Art* : A general review by a number of well-known authorities, with an introduction by Roger Fry, and many plates in colour and from photographs. *The Elements of Design and Form in Classic Architecture* : By Arthur Stratton. With 100 specially prepared plates. *French Provincial Architecture* : By P. Lippincott Goodwin and H. O. Milliken. A record from the authors' measured drawings and photographs. *Expression in the Human Figure* : A series of photographic studies by Bertram Park. With an introduction by G. M. Ellwood.

Allied Societies

BERKS, BUCKS AND OXON ARCHITECTURAL ASSOCIATION.

There was a representative gathering at the annual dinner of the Association, which was held at Reading on 30 January. Mr. Edward P. Warren, the President, was in the chair, and amongst those present were Mr. J. Alfred Gotch, P.R.I.B.A., Mr. W. M. Childs, M.A. (Principal University College, Reading), Mr. Percy Thomas (President South Wales Institute of Architects), Alderman F. A. Cox, J.P. (Mayor of Reading), Mr. W. C. Walker (President Southern Counties Building Trades Employers' Federation), Mr. J. A. Smith (Vice President Hampshire and Isle of Wight Association of Architects), Rev. P. H. Ditchfield, Mr. W. R. Howell (Deputy Mayor of Reading), Mr. H. Hutt (Hon. Secretary of the Association), etc.

The Chairman in proposing "The Town of Reading and its University College," said that the Association owed a good deal to University College, Reading ; it hospitably provided them with a room and gave them sympathy and help and they hoped before long, certainly when it became a university, that they would have an architectural school founded there. No town and no university could exist in a dignified manner without the assistance of architects.

The Mayor of Reading and Principal Childs replied.

Mr. T. Rayson (Hon. Secretary Oxford Society of Architects) in proposing the toast of the R.I.B.A., referred to the loss sustained by the whole profession and the Institute by the death of Mr. Paul Waterhouse and Mr. W. H. Ward.

Mr. Gotch in replying said that architectural work had improved enormously in the last fifty years, and referred to the helpful work of the Allied Societies. One of the most beneficent outcomes of the establishment of these allied societies was that conferences were held by their President at stated intervals in London. To those conferences he attributed very largely the success of their efforts in regard to the amalgamation of the Society of Architects with the Royal Institute, which must have a most beneficent effect. Mr. Gotch proposed the toast of "The Allied Societies."

Mr. J. Arthur Smith (Vice President, Hampshire and Isle of Wight Association) responded.

Mr. E. P. Warren (in replying to the toast of the Association, proposed by Mr. Percy Thomas) referred to the invaluable work done for the Association by Mr. Hutt.

YORK AND EAST YORKSHIRE ARCHITECTURAL SOCIETY.

Annual Dinner.

Mr. Stephen Wilkinson, president of the Society, presided at the annual dinner of the members of the Society, held the 6 February.

The other guests present were Mr. J. Alfred Gotch (president of the Royal Institute of British Architects), Mr. W. T. Jones (president, Northern Association), Mr. W. Alban Jones (president, Leeds and West Yorkshire Society), Mr. J. M. Dossor, Hull (vice-president, York and East Yorkshire Society), Mr. J. E. Reid (hon. secretary, York and East Yorkshire Society), Mr. E. A. Pollard (hon. treasurer, York and East Yorkshire Society), Mr. W. H. Brierley, Mr. S. Needham, Mr. A. B. Burleigh, Mr. H. Monkman, Mr. T. Snowden (Hull),

Mr. A. Cowman, Mr. S. G. Highmoor, Mr. R. Jackson, Mr. J. Vause, Mr. T. E. Cliffe, Mr. C. Leckenby, and Mr. H. H. Clifford.

Letters of regret for absence were received from Mr. Alan E. Munby, (vice-president York and East Yorkshire Society), Mr. George Benson, Mr. H. A. Paterson (president, Sheffield Society), Mr. J. Hope (president, Manchester Society), Mr. Ian MacAlister (secretary of the Royal Institute of British Architects), and Mr. W. S. Walker (Hull).

Mr. Dossor proposed " The Royal Institute of British Architects," and touched upon the question of whether architects should advertise. He pointed out that there was a very great danger in resorting to advertisement without very judicious handling. They could, however, advertise the Institute by every proper and legitimate means, and build up a reputation for a society which had served them well. He thought that in the courts preference was nearly always given to the evidence of professional men who were members of some recognised society.

Mr. Gotch, in responding to the toast, commented upon the increasing number of architects, and said as a consequence of that there was an increase of work. Not only had the work increased, but the quality of it had increased in an extraordinary way. In his young days, architectural talent was almost confined to London, but this was not the case now, and the talent was scattered over the country. There was an increasing influence of the Institute in recent years, and it bid fair to enlarge its sphere further, mainly by reason of the amalgamation with the Society of Architects, which was successfully accomplished. The most important step in widening the influence of the Institute had been the greater vigour shown by the allied societies in recent years. The Institute was tackling the questions of better facilities in education for young architects, and instituting a certain number of maintenance scholarships, so that young students not blessed with very large means, but who had distinct inclination and calling towards architecture, might be able to start on the arduous task of training which every architect must master.

Mr. W. Alban Jones proposed " The York and East Yorkshire Society," to which the president of the York Society responded.

The President criticised the steel houses which are proposed for the country, and characterised them as merely army huts covered with a one-eighth plate. He felt sure no prospective owner would ever dream of putting his savings into the houses. Personally, he had forwarded a report to the Royal Institute and other bodies who were greatly concerned as to whether they should erect these steel houses. There were no architectural pretensions whatever about the steel houses.

Mr. W. T. Jones proposed " The Yorkshire Group," and said that the provinces had now got a stronger hold on the Royal Institute, the present president being the first provincial architect elected to the position.

Mr. Brierley responded, and said the different societies were doing their utmost to cultivate and maintain the best traditions of architecture as they had been handed down, and they would, he felt, continue to do so. He thought the difficulties of an architect had never been so great as they were at the present time, for, in addition to the inflated and complicated requirements of modern building that they had to provide for, think out and fit together, was now added the bugbear of inflated costs, and the difficulty occasioned by the scarcity of skilled and artistic craftsmen.

SOUTH WALES INSTITUTE OF ARCHITECTS (WESTERN BRANCH.)

Annual Branch Meeting.

The annual meeting of the South Wales Institute of Architects (Western Branch) was held on Friday, 27 February, at the Hotel Metropole, Swansea, when the following officers were elected for the ensuing year :—

Chairman, Mr. H. C. Portsmouth, F.R.I.B.A.

Treasurer and Librarian, Mr. C. Russell Peacock, F.R.I.B.A.

Hon. Secretary, Mr. J. Herbert Jones, F.R.I.B.A.

Hon. Auditor, Mr. Ernest E. Morgan, A.R.I.B.A.

Committee, Messrs. Charles S. Thomas, F.R.I.B.A., Oliver S. Portsmouth, A.R.I.B.A., Edwin Smith, A.R.I.B.A., G. R. Hubert Rogers, Sidney R. Crocker, Licentiate R.I.B.A., and G. L. Crocker and C. W. Geddes, Associates' representatives.

The Members elected to serve on the Council of the South Wales Institute of Architects were :—

Messrs. H. C. Portsmouth, F.R.I.B.A., Charles S. Thomas, F.R.I.B.A., J. Herbert Jones, F.R.I.B.A., G. R. H. Rogers, Edwin Smith, A.R.I.B.A., Oliver S. Portsmouth, A.R.I.B.A., S. R. Crocker, Licentiate R.I.B.A., and G. L. Crocker, Associates' representative.

The Chairman, in his address, referred to the amalgamation of the R.I.B.A. and the Society of Architects, which was now an accomplished fact. The new Charter had been approved by the Privy Council and sanctioned by the King within the last few days. He hoped that the Institute would be greatly strengthened thereby, and that it could look forward to a period of increased usefulness and vitality.

The Hon. Secretary stated that the membership of the Branch had increased during the past twelve months, and now stood at 70, viz., 34 Fellows, 16 Associates and 20 Student members.

Obituary

H. MOSS [*A.*].

Mr. Harry Moss, who was born at Moss Side, Manchester, and was elected an Associate of the Royal Institute of British Architects in 1906, died at Bolton on 12 February.

Mr. Moss served his articles with Mr. Fred Dixon, of Manchester and Oldham. During his pupilage several prizes were won by him, notably the Manchester Society of Architects' prize for measured drawings and the *Building News* prize for sketches made on the Continent. After remaining with Mr. Dixon some years as assistant, he obtained an engagement with Messrs. Bradshaw Gass and Hope, in whose office he took an active part in the design of some important buildings. From Bolton Mr. Moss went to Bradford, where he acted for several years as chief assistant to the City Architect. Later he was appointed housing architect to the Pontardawe District Council, Swansea, where he designed and carried out several extensive housing schemes, the lay-outs of which were difficult owing to the hilly nature of the

sites. After completing the housing schemes at Pontardawe, Mr. Moss returned to his former employers at Bolton, when he was stricken with a serious illness from which he never recovered.

During his professional career Mr. Moss won several competitions, the most important being the Llandrindod Wells Pump Room and Concert Hall Competition, the building being erected in accordance with his designs.

Wm. Eaton [*A.*].

THE BRITISH SCHOOL AT ROME.

Rome Scholarship and Henry Jarvis Studentship in Architecture, 1925.

Preliminary Competition :

Report of the Faculty of Architecture on the Designs Submitted.

The Faculty, after carefully examining the drawings submitted by 19 competitors in the Preliminary Competition for the Rome and Jarvis Scholarships of 1925, have decided to select the following competitors to take part in the Final Competition :—

Mr. F. N. Astbury.	Mr. C. A. Minoprio.
Mr. R. W. Briggs.	Mr. W. F. Scarlett.
Mr. G. A. Butling.	Mr. H. G. C. Spencely.
Miss I. J. Macfadyen.	Mr. R. J. Willis.

Note.—Miss Elsie Rogers, Finalist of 1924, was admitted direct to the Final Stage of the Competition for 1925 by resolution of the Faculty—30 October 1924.

The subject set was a monumental and commemorative gateway to a walled and moated town which had been devastated during the war. There were two types of solution proposed by the competitors ; one was to stop the ends of the ruined walls with piers or pylons, leaving an opening for the great roadway ; the second was to build a definite gateway with openings for traffic. Both solutions appeared to be fitting and reasonable.

The Faculty desire to draw attention to a defect which is common to most of the designs :—

Many competitors seemed inclined to rush at their solution without adequate preliminary consideration of the data of the problem, and in their desire to produce a monumental effect they have lost sight of the actual problem and produced designs altogether out of proportion to a town of normal scale. For example, in many instances they do not appear to have realised that there was a background of buildings about 80 feet high, at a distance of only 60 feet from the town wall, and that the town wall drops 20 feet into the moat and thus presents a face 40 feet high in the front elevation.

(Signed) Reginald Blomfield,
Chairman, Faculty of Architecture, British School at Rome.

STUDENTS' EVENING AT THE R.I.B.A.

A Students' Evening was held on Wednesday, 18 February 1925, in the galleries of the R.I.B.A., 9 Conduit Street, W.1, where the architects' working drawings of the following buildings are exhibited :—Adelaide House, London Bridge ; Britannic House, Finsbury Circus ; Tetton House, Kingston, Somerset ; Bush House, Aldwych, kindly lent by Sir John Burnet, R.A., and Partners, Sir Edwin Lutyens, R.A., Mr. H. S. Goodhart-Rendel and Messrs. Bush House, Ltd., respectively.

Mr. H. S. Goodhart-Rendel [*F.*], Mr. T. S. Tait [*F.*], and Mr. R. H. Houchin were present, and they kindly explained the special points of interest in Tetton House, Adelaide House and Bush House respectively.

NOTES FROM THE MINUTES OF THE COUNCIL MEETING.

16 *February* 1925.

British Architects' Conference 1926.

On the recommendation of the Allied Societies' Conference, it was decided that the British Architects' Conference for 1926 should be held in London.

Masonic Million Memorial Competition.

On the recommendation of the Competitions Committee it was decided to urge the promoters of this Competition to extend the date for sending in designs by one month.

The National Association of Water-Users.

Mr. E. J. Sadgrove was appointed to represent the R.I.B.A. on the Council of the Association.

Resignations.

The Council accepted with regret the resignation of Mr. C. R. Mackintosh [*F.*].

BOARD OF ARCHITECTURAL EDUCATION.

R.I.B.A. Intermediate and Final (and Special) Examinations.

The attention of candidates is called to the fact that in the written papers the style of English in which the answers are written will be taken into consideration by the examiners when awarding marks.

R.I.B.A. INTERMEDIATE EXAMINATION.

Testimonies of Study.

Section D : Construction Applied to Elementary Design.

" Working drawings of a domestic building of moderate dimensions showing clearly the construction of floors, roofs, joinery, etc."

Attention is drawn to the requirement of the Board of Architectural Education that the domestic building must be designed by the candidate himself.

Notices

THE TENTH GENERAL MEETING.

The Tenth General Meeting (Ordinary) of the Session 1924–1925 will be held on Monday, 16 March 1925, at 8 p.m., for the following purposes :—

To read the Minutes of the General Meeting (Business) held on 2 March, 1925 ; formally to admit members attending for the first time since their election.

To read the following paper, " The Corporate Spirit in Architecture," by Mr. F. R. Hiorns [F.]

ELECTION OF MEMBERS, 8 JUNE 1925.

Associates who are eligible and desirous of transferring to the Fellowship Class are reminded that if they wish to take advantage of the election to take place on 8 June 1925, they should send the necessary nomination forms to the Secretary, R.I.B.A., not later than Saturday, 21 March.

VISIT TO THE TOWER OF LONDON.

A visit has been arranged by the Art Standing Committee to take place on Saturday, 14 March, to the Tower of London. Members desirous of taking part are requested to make early application to the Secretary, R.I.B.A., 9, Conduit Street, London, W.1.

ARCHITECTURE AND THE CRAFTS.

CRAFT LECTURES.

A series of popular lectures on the Crafts associated with Architecture has been arranged by the Council of the Royal Institute of British Architects. They will be open free to the general public, and in certain cases will be associated with exhibitions of examples of the crafts which form the subjects of the lectures. The following is a complete list of the lectures, which will be given in the hall of the Royal Institute of British Architects, 9 Conduit Street, W.1 :—

Wednesday, 25 March, at 5 p.m. "Heraldry and Architecture." Walter H. Godfrey.

Friday, 3 April, at 5 p.m. "Coloured Carving in Wood and Stone." Laurence Turner.

Tuesday, 21 April, at 5 p.m. "Metal Work." R. L. Rathbone.

Thursday, 30 April, at 5 p.m. "Mural Painting." John D. Batten.

R.I.B.A. ANNUAL DINNER, 1925.

The Annual Dinner of the Royal Institute of British Architects will take place on Tuesday, 12 May. Full particulars will be issued at an early date.

THE 58TH ANNUAL CONVENTION OF THE AMERICAN INSTITUTE OF ARCHITECTS.

20TH TO 24TH APRIL 1925.

The attention of Members is called to the cordial invitation received from the President of the American Institute of Architects to British architects to attend the above Convention to be held in New York (see R.I.B.A. JOURNAL, page 194, 24 January 1925).

It is hoped that a substantial number of British architects will be able to take advantage of this most welcome invitation and that they will send their names as soon as possible to the Secretary, R.I.B.A., 9, Conduit Street, London, W.1, from whom particulars can be obtained as to steamship sailings, passage rates, hotel accommodation, passports, etc.

DINNER TO THE PRESIDENT AND COUNCIL OF THE SOCIETY OF ARCHITECTS.

The President and Council of the Royal Institute of British Architects have invited the President and Council of the Society of Architects to dine with them at the Trocadero Restaurant on Monday, 23 March.

It will be remembered that the Council of the Society of Architects entertained the Council of the R.I.B.A. at dinner at the Piccadilly Hotel on 11 December last.

Competitions

STOCKSBRIDGE PUBLIC SWIMMING BATHS COMPETITION.

Members and Licentiates of the Royal Institute of British Architects must not take part in the above competition because the conditions are not in accordance with the published regulations of the Royal Institute for Architectural Competitions.

COALVILLE PUBLIC BATHS COMPETITION.

The President of the Royal Institute of British Architects has nominated Mr. Alfred W. S. Cross, F.R.I.B.A., as assessor in this competition.

CANADIAN WAR MEMORIAL COMPETITION

The Secretary of the Department of Public Works of Canada has requested the Secretary of the R.I.B.A. to distribute to British architects likely to submit designs, copies of the conditions of the Competition for the proposed National Commemorative War Monument to be erected at Ottawa. The cost of the monument is to be one hundred thousand dollars.

A few copies of the conditions, together with declaration forms, can be obtained by application to the Secretary, the R.I.B.A., 9, Conduit Street, W.1.

COMPETITION FOR A HIGH BRIDGE OVER COPENHAGEN HARBOUR.

Copenhagen Municipality hereby invite participation in an International Competition in connection with a High Bridge over Copenhagen Harbour.

The Municipality have set apart a sum of 35,000 kroner to be expended in prizes. There will be three prizes, the value of which will be fixed by a Judgment Committee consisting of Members of the Council, together with technicians chosen by the Municipality, the (Danish) Institute of Civil Engineers and the (Danish) Society of Architects. The largest prize will be at least 15,000 kroner.

Programme and particulars in Danish and English can be procured after 1 February 1925, from the City Engineer's Office, Town Hall, Copenhagen B, against a deposit of kr. 100.

The deposit is repayable after the judging, or previously if the drawings, particulars, etc., are returned in good condition. Projects to be delivered to the City Engineers Directorate, Town Hall, before mid-day, 1 September 1925.

After judgment the competing projects will be publicly exhibited at the Town Hall, Copenhagen.

LEAGUE OF NATIONS.

COMPETITION FOR THE SELECTION OF A PLAN WITH A VIEW TO THE CONSTRUCTION OF A CONFERENCE HALL FOR THE LEAGUE OF NATIONS AT GENEVA.

The League of Nations will shortly hold a competition for the selection of a plan with a view to the construction of a Conference Hall at Geneva. The competition will be open to architects who are nationals of States Members of the League of Nations.

An International Jury consisting of well-known architects will examine the plans submitted and decide their order of merit.

A sum of 100,000 Swiss francs will be placed at the disposal of the Jury to be divided among the architects submitting the best plans.

A programme of the competition will be ready in February, 1925, and will be despatched from Geneva so that Governments and competitors may receive copies at approximately the same date. Copies for distant countries will therefore be despatched first.

The British Government will receive a certain number of free copies. These will be deposited at the Royal Institute of British Architects, and application should be made to the Secretary, R.I.B.A., 9, Conduit Street, W.1, by intending competitors.

Single copies can be procured direct from The Secretary-General of the League of Nations at Geneva, for the sum of 20 Swiss francs, payable in advance, but will not be forwarded until after the Government copies have been despatched.

On the nomination of the President of the Royal Institute, Sir John Burnet, A.R.A., has been appointed as the British representative on the Jury of assessors.

THE NEW INSTITUTE FOR THE BLIND, BUENOS AIRES, ARGENTINE REPUBLIC.

An International Competition has been promoted for the Argentine Institution for the Blind, Buenos Aires, Argentine Republic.

A small number of copies of the Conditions have been deposited in the R.I.B.A. Library for the information of British Architects who may desire to compete.

MASONIC MEMORIAL COMPETITION.

Closing date for receiving designs, 1 May 1925. Assessors: Sir Edwin Lutyens, R.A. [*F.*] (appointed by the President); Mr. Walter Cave [*F.*], Mr. A. Burnett Brown, F.S.I.

BETHUNE MEMORIAL TO THE MISSING.

The Imperial War Graves Commission desire Members and Licentiates of the Royal Institute to be reminded that applications to take part in the above Competition from persons other than those who had signified their intention of competing on or before 1 January 1924 cannot be considered. Due notice of this regulation was published in the Professional Press on various occasions during August and September, 1923.

TECHNICAL COLLEGE, MIDDLESBROUGH.

The conditions of the above Competition have been submitted to the Competitions Committee of the R.I.B.A., and are found to be in accordance with the Regulations of the R.I.B.A.

ROYAL SOCIETY OF ARTS.

Memorial Library for a College Competition.

In order to encourage the study of designs for industrial purposes the second series of open competitions organised by the Royal Society of Arts will include a competition for a Memorial Library for a College suitable for housing a small but rare collection of books.

The conditions are as follows:

A Travelling Scholarship of the value of £150 for one year will be offered on the following conditions:

Candidates must not be over 35 years of age. They must be prepared to travel in France, Italy, Spain or Flanders for six months, which, however, may be broken up into periods of, say, three or two consecutive months.

Subject of Competition.

The subject is a Memorial Library for a College, suitable for housing a small but rare collection of books.

The superficial area of the room is not to exceed 1,500 feet. The method of arranging the bookcases and displaying a few *objets d'art* is left to the competitor. Cost is not a primary consideration, and the use of expensive woods, as well as inlays of ivory, ebony or metal, in addition to marble, can be considered.

In a suitable place a commemorative panel or some other *motif* should remind the visitor of the origin of the Library. The scheme of the ceiling, which can be treated as a space for decorative painting, as well as the pattern of the floor, must harmonise with the whole design.

A preliminary competition of twelve hours will be held in London and other centres in April 1925. Candidates must give notice of their intention to compete to the Secretary of the Royal Society of Arts, not later than 14 March. For this competition the following drawings will be necessary:

A plan of the floor, one section, and a plan of the ceiling, all to the scale of a quarter of an inch to a foot.

For the final competition two months will be allowed to the competitors, selected after the first competition. The finished drawings are to include the following:

Plans of floor and ceiling and two sections to a scale of half an inch to a foot, a detail drawing of the fireplace or some other feature, showing the complete height and treatment of the room from floor to ceiling.

Competitors should bear in mind that electric lighting and central heating are to be considered.

The competition will take place in June 1925.

Members' Column

OFFICE ACCOMMODATION WANTED.

A.R.I.B.A. requires light offices, or would consider sharing suite. Westminster or West district. Please state full particulars with inclusive terms. Box 1011, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

OFFICES TO LET.

Office to let in New Burlington Street. Three or four rooms suitable for architect. Rent £200 per annum inclusive. Apply Box No. 1925, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

F.R.I.B.A., with convenient offices in Westminster, is willing to sub-let them furnished or unfurnished on 12 months' or 3 years' agreement. Apply Box 2625, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.1.

COLLABORATORS WANTED.

A firm of architects, who have made a speciality of dealing with complicated building problems involving difficulties under the Building Acts, are prepared to collaborate with other architects in a consultative capacity. Apply Box 2725, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.1.

APPOINTMENTS WANTED.

Young F.R.I.B.A., varied experience in town and country work, requires position at home or abroad. Planning, details, specifications and quantities. Can take charge. References and fullest particulars offered. Apply, in the first instance, to the Secretary R.I.B.A., 9 Conduit Street, W.1.

Licentiate of long experience in London available for temporary work. Working drawings of small houses, factories, banks, etc. Expert in steel construction. Qualified for district surveying. Address Box 4211, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

Student R.I.B.A., age 22, who has had a particularly sound office training and is at present employed by a leading firm, would be glad to hear from any member or firm requiring assistance. Salary required £286 per annum; present salary £200 per annum. Apply Box 5625, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

Architectural engineer of very large experience desires work, temporary or permanent, anywhere. Special qualifications in geology, mining, drainage, underpinning and shoring, ventilation and heating, foundations and dilapidations, building and land surveying, also levelling. Highest references. Willing to take charge of job.—Apply Box 8322, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

Clerk of Works with many years English and American experience, desires appointment in town or country on any kind of work. Highest references; salary by arrangement. Reply Box 3822, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

Architect's widow, thoroughly experienced cooking, economical housekeeper, desires post (with boy of 2) where maid kept; salary; excellent references. Not London. Reply Box 1655, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

PARTNERSHIPS WANTED.

A.R.I.B.A. (31), good all round experience, wishes to enter into partnership with well-established firm of architects and surveyors. Capital available. Lancashire, Cheshire or North Wales preferred. Box 3131, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

A.R.I.B.A. seeks partnership in old-established London firm. Willing to invest capital and amalgamate own practice. Reply Box 3112, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

A.R.I.B.A., B.Arch. Liverpool, age 31, desires partnership with established architect who requires a junior, or post in office with a view to partnership. Good qualifications and references. Apply Box No. 9225, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.1.

ACCOMMODATION OFFERED.

Architect's widow offers good accommodation, bed and breakfast, near Russell Square; central for all parts of London. Bathroom. Electric light. Well recommended and terms moderate. Reply Box 1425, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

Minutes IX

SESSION 1924—1925.

At a Special General Meeting held on Monday, 2 March, 1925, at 8 p.m., Mr. J. Alfred Gotch, F.S.A., President, and afterwards Mr. Walter Cave, Vice-President, in the chair. The attendance book was signed by 11 Fellows (including 4 Members of the Court) and 5 Associates and 2 Licentiates.

The Minutes of the Special General Meeting held on 16 February, 1925, having been published in the Journal, were taken as read, confirmed, and signed by the Chairman.

The President announced that the Meeting had been summoned for the purpose of confirming the Resolution passed at the Special General Meeting held on the 16 February, as follows :—

That the new Bye-law 29 be amended by the addition of the following words after paragraph (*f*) :—

"(*g*) The Chairman of the Board of Architectural Education, being a Fellow of the Royal Institute."

And that the necessary steps be taken to obtain the sanction of the Privy Council to such addition to Bye-law 29 as is required to give effect to this resolution.

The Resolution was moved from the Chair and passed by a unanimous vote.

On the motion of the President it was Resolved by acclamation that, subject to His Majesty's gracious sanction, the Royal Gold Medal for the promotion of Architecture be presented this year to Sir Giles Gilbert Scott, R.A. [*F.*], in recognition of the merit of his work as an architect.

The Special General Meeting then terminated.

At the Ninth General Meeting (Business) of the Session 1924–1925, held on Monday, 2 March, 1925, immediately after the Special General Meeting above recorded, and similarly constituted, the Minutes of the Meeting held on 2 February, 1925, having been published in the Journal, were taken as read and signed as correct.

The Hon. Secretary announced the decease of the following members :—Major William Bakewell, elected Fellow 1892 and transferred to the List of Retired Fellows in 1922 ; Mr. Harry Moss, elected Associate 1906.

It was RESOLVED that the regrets of the Institute for their loss be entered on the Minutes, and that a message of sympathy and condolence be conveyed to their relatives.

The following candidates were elected to membership by show of hands under Bye-law 10 :—

AS FELLOWS (6).

BARKER : RAYMOND TURNER [*A.* 1899].
BESWICK : WILLIAM [*A.* 1911], Chester.
DANNATT : PERCY BOOTHROYD, F.S.I. [*A.* 1903].
PARKIN : WILLIAM GORDON [*A.* 1918], Tientsin, China.
SLATER : JOHN ALAN, M.A.Cantab. [*A.* 1911].
WILSON : JOHN GODDARD [*A.* 1923], Pretoria, South Africa.

AS ASSOCIATES (15).

BARNSLEY : GEOFFREY REYNOLDS [*Final Examination*].
BEST : MAJOR HALSTEAD, R.E. (ret.), F.S.I. [*Special Examination*], Blackpool.
CUMMINGS : CLIFFORD LANE [*Special War Examination*], Melbourne, Australia.
ELIJAH : SAMSON ABRAHAM [*Final Examination*], Bombay, India.
ENTHOVEN : RODERICK EUSTACE [*Passed five years' course at Architectural Assocaition—Exempted from Final Examination after passing Examination in Professional Practice*].
FAIRHURST : PHILIP GARLAND [*Passed five years' course at Manchester University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice*], Wilmslow, Cheshire.
HINES : EDWARD GEORGE [*Final Examination*].
LANGCAKE : WILFRED [*Special Examination*].
MASON : HILDA FRANCES [*Final Examination*].
MILLER : JOSEPH HAYDN, B.Arch.Liverpool [*Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice*], Wigan.
MILLS : JOHN CHECKLEY ROBINSON [*Special War Examination*], Sydney, N.S.W.
PAKINGTON : HONBLE. HUMPHREY ARTHUR [*Passed five years' course at Architectural Association—Exempted from Final Examination after passing Examination in Professional Practice*].
PHILLIPS : LIONEL BLYTHEWOOD [*Special War Examination*], Sydney, N.S.W.
STEELE : HAROLD ROOKSBY [*Final Examination*].
TOWNSEND : JOYCE ELEANOR [*Passed five years' course at Architectural Association—Exempted from Final Examination after passing Examination in Professional Practice*].

AS HON. ASSOCIATE (1).

STEGGALL : JOHN EDWARD ALOYSIUS, M.A.Cantab, F.R.S.E., Professor of Mathematics in the University of St. Andrews, at University College, Dundee.

Mr. Owen Fleming [*A.*] having given notice that at this meeting he proposed to invite attention to recent and impending architectural changes in the neighbourhood of Charing Cross Station and to move a resolution, proposed that the R.I.B.A. should promote a competition (with premiums amounting to 100 guineas) for plans for the development of the western end of the Strand.

The motion having been seconded by Mr. J. E. Franck [*F.*], was discussed. The Chairman announced that at the Council Meeting the same day the following resolution had been passed : "That the London Society and the Town Planning Institute should be approached with a view to joint representations being made to the London County Council in favour of a great competition being promoted by the latter body, for schemes which include all aspects of the future development of the Strand and Charing Cross area." Mr. Fleming expressed his readiness to withdraw his proposal in favour of the Council's resolution, and it was thereupon RESOLVED by a unanimous vote that the Council's resolution be approved. The Proceedings ended at 9.15 p.m.

WARNING TO MEMBERS.

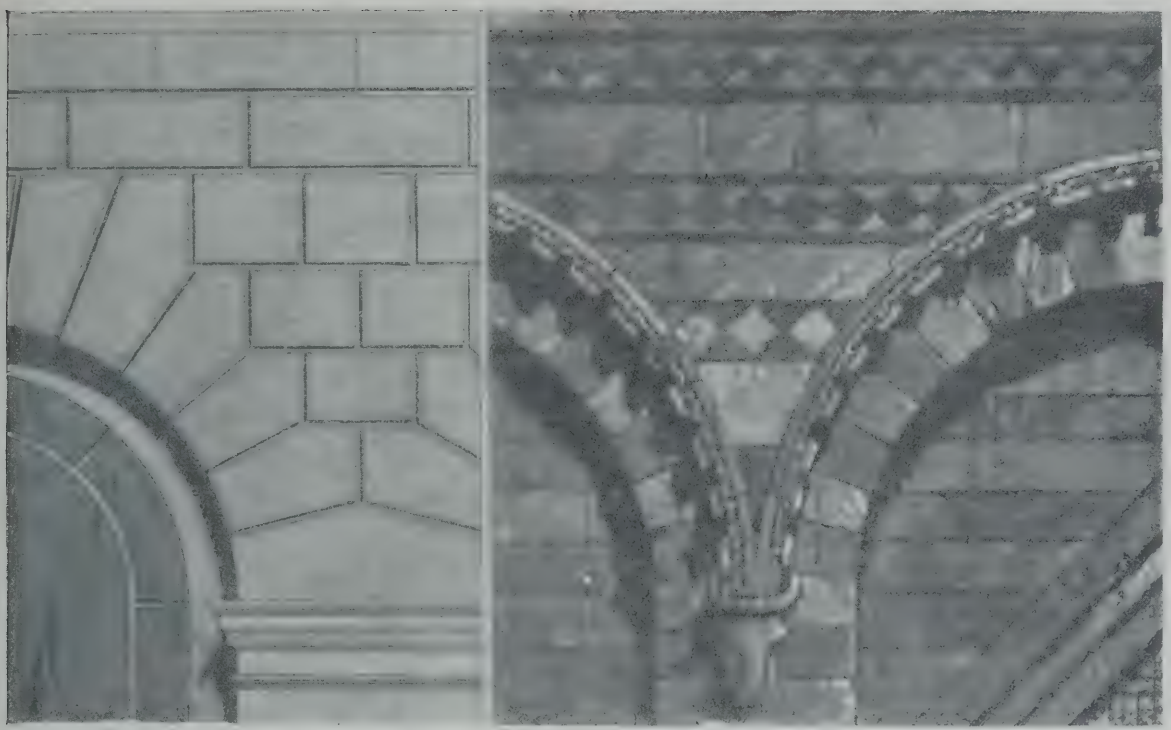
On the 30th September last at Bow Street Police Court a man was sentenced to three months' imprisonment for obtaining money by false pretences by impersonating an ex-Licentiate of the R.I.B.A. and calling on architects and appealing for temporary assistance. The Secretary has been informed of a repetition of the impersonation, and members are requested to at once communicate with the R.I.B.A. in the event of their receiving a visit from the individual in question.

It is desired to point out that the opinions of writers of articles and letters which appear in the R.I.B.A. JOURNAL must be taken as the individual opinions of their authors and not as representative expression of the Institute.

Members sending remittances by postal order for subscriptions or Institute publications are warned of the necessity of complying with Post Office Regulations with regard to this method of payment. Postal orders should be made payable to the Secretary R.I.B.A., and crossed.

R.I.B.A. JOURNAL.

Dates of Publication.—1924 : 8th, 22nd November ; 6th, 20th December. 1925 : 10th, 24th January ; 7th, 21st February ; 7th, 21st March ; 4th, 25th April ; 9th, 23rd May ; 13th, 27th June ; 18th July ; 15th August ; 19th September ; 17th October.



MECHANICAL OR "MACHINE-MADE" BUILDING — THE WORK OF CRAFTSMEN

PLATE FROM RUSKIN'S *Stones of Venice*

The Corporate Spirit in Architecture

BY FREDERICK R. HIORNS [*F.*].

[*Read before the Royal Institute of British Architects on Monday*, 16 *March* 1925]

IT has been well said of Plato that, though his writings embody with such completeness the philosophy of the Beautiful, there is little in the way of direct reference to the Fine Arts, to Poetry, or any of those things that we now comprehend under the term Aesthetics. The explanation of what appears, superficially, a somewhat curious condition is a relatively simple one. It is that the Greeks were so fully in possession of the Beautiful in both theory and practice that the objects of its practical expression were taken for granted in writing and in speech—that the process by which that people had become possessed of attractive surroundings to the elimination of the unpleasant, the unsuitable, or the ugly, was so natural to them—so obvious and so ordinary—that it had ceased in Plato's time to be a matter to speculate upon. It may be presumed, indeed, that we now accept that "the æsthetical atmosphere which Plato and the ancient Athenians breathed, in the generations immediately succeeding Phidias, was the purest that has been known in the history of the world." In the realm of creative beauty there seemed nothing to do but to take for granted what, as a matter of course, was provided. In J. B. Patterson's work on the Character of the Athenians he emphasises that the Fine Arts were to them national pursuits—that Architecture, Sculpture and Painting were public talents—that Phidias, Ictinus, and others produced their divine creations to gratify no primitive taste, to serve the esoteric fancies of no select and lordly tribe of connoisseurs ; they were the nation's Ministers ; their works the nation's boast ; their reward the nation's munificence—that, indeed, everything that was splendid among

the Athenians was public, their private life being as remarkable for frugality and unambitiousness as were their national manners for emphasis of national and civic greatness. Did not, indeed, Demosthenes the Orator, speaking of Athens, say that the structures and decorations of the city, the temples, the harbours and similar public works were left by their ancestors in such multitude and splendour as to render the attempt to surpass them hopeless. "Look round you," said he, "upon the propylœa, the docks, the porches and all the other edifices with which they have transmitted to us the city furnished and adorned. But, on the other hand, the private houses of such as were then in power were so unambitious and suitable to republican equality that whoever among you has seen the dwellings of these illustrious men knows that they are distinguished from those around them by no superior splendour." There is much evidence to show, too, that Rome, before the period of its decadence, was imbued with the same admirable spirit, whereby both its rulers and people, though less perfectly than the Greeks, always placed national and civic interests before the personal and domestic, and expressed it suitably in the orderly regularity of their cities. Tacitus despised the Germans for their lack of regularly planned towns, and the fact that, unlike the Romans, they built regardless of beauty, order and proportion. He commended the principles upon which Rome was rebuilt after the fire caused by Nero, when, as he says, a regular plan was formed, the streets were made wide and long; and the elevation of the houses was designed with an open area before the doors and porticos to secure and adorn the front. Both of these peoples—the Greeks for themselves and the Romans with the aid of the superior culture of Greece—cultivated, when not occupied by wars, the arts of poetry, oratory, the drama and music in an environment of noble Architecture, fine Sculpture, and splendid colour. Such an environment was created for them, indeed—under the influence of wise philosophical teaching and good government—as, in the course of generations, encouraged and cultivated all that made for excellence of æsthetic judgment. "For," as has been further said,* "in the causes by which perfection of the various liberal Arts was produced among the Athenians, are involved reasons for the high standard of taste that completed their mental character; that as the powers of the creative faculty were improved so the perceptions of the judging faculty were refined in the same degree; and, in the natural progress of the fine Arts at Athens, that bloom of national taste at last evolved itself which distinguishes the age of Sophocles and the Parthenon." It is not, therefore, strange that the philosophy of Plato should assume the existence of beauty in its most comprehensive and intuitive sense and not expend itself uselessly in teaching the obvious. That Athens in the golden age fulfilled this assumption is, I imagine, not doubted. Does not Plutarch record that Pericles taught that the wealth of a State "should be laid out on such works as, when executed, would be eternal monuments of its glory, and which, during their execution would diffuse a universal plenty; that as so many kinds of labour and such a variety of instruments and materials were requisite to these undertakings, every art would be exerted, every hand employed, almost the whole city would be in pay and be at the same time both adorned and supported by itself." He points out materials the use of which would give employment to "carpenters, masons, braziers, goldsmiths, painters, turners and other artificers," besides occupying many others in preparatory and incidental operations. He shows further how, by the exercise of these different trades, a condition of plenty had been secured and was diffused among persons of every rank and condition. Thus, adds Plutarch, were buildings raised of not only astonishing magnitude but, as regards craftsmanship, finished in inimitable beauty and perfection. Artists and workmen so engaged he mentions by name. To show how highly skilled workmen were valued he relates that, when one fell from a wall and was injured, Pericles paid tribute for his recovery by raising before an altar a brazen statue of the Minerva of Health. In following, however cursorily, the course of what we must regard as one of the finest artistic phases known to the world—Athens in the age of Pericles, of Plato, of Socrates, and of Phidias—we see how essentially it arises out of the corporate spirit in the people themselves, who encouraged and delighted in the beauty of cities, and out of a like spirit in the workers or

* *The National Character of the Athenians*, by John Brown Patterson, M.A. 1860.

craftsmen actually responsible for its material expression.

Pompeii, despite its ruin and incompleteness, provides us still with an effective picture of the Græco-Roman point of view in urban architecture two thousand years ago. In it we see the general arrangement of an ancient town—the orderly and stately treatment of its public spaces and buildings ; the modest expression, externally, of its house architecture, combined with astonishingly beautiful examples of craftsmanship and

Pompeiian Fresco

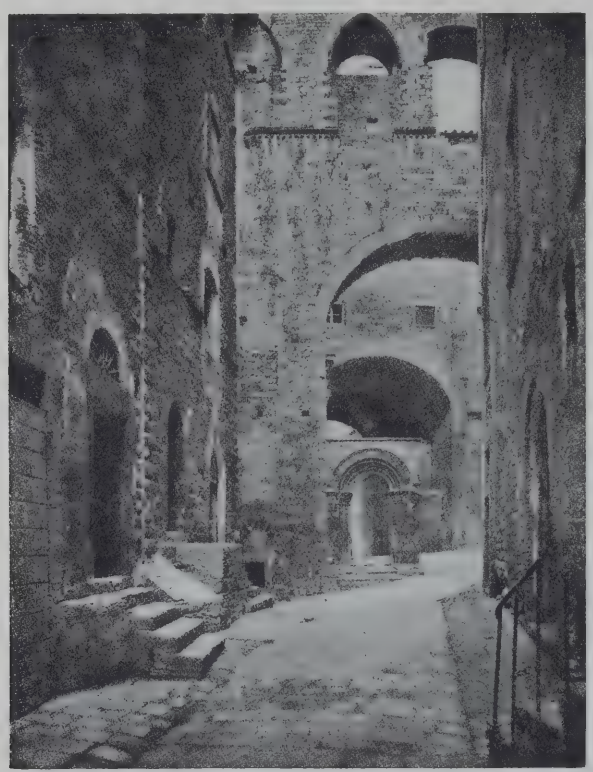
a generous completeness and great refinement in the general design and decorative finish of its interiors. The precedence of civic over private interests is clear—the general unobtrusiveness of house façades, whatever the wealth and importance of their owners and the richness and beauty of interiors, is equally shown. *Taine, who wrote with much insight on ancient and modern Italy, said with regard to Herculaneum and Pompeii that the city of those days was a veritable patrimony and not, as with us moderns, a government collection of lodging houses—that there men regarded their cities as a jewel and casket and found in them a combination of all salutary, sacred and beautiful things, which they were proud to defend, love and venerate. If he is right it explains why so much beauty survives in Pompeii.

With such an introductory comment, may I be allowed to say that my paper will furnish nothing but what you already know in respect of a few points that its title may suitably be considered to cover. These are briefly—due consideration for the general aspect of towns and homogeneity in the character of their buildings ; respect for all good work or examples of craftsmanship of our own or former periods ; simplicity and sincerity in present-day building expression ; and the right encouragement and provision of opportunity for the work of living craftsmen, as distinct from the products of so-called " Commercial Art."

In considering, therefore, as we have briefly done, the Classical conception of the building and other useful Arts we are forced to notice the essentially

* *Voyage en Italie*, par H. Taine (l'ecole des Beaux-Arts, Paris).

different point of view of the mechanical-industrial age of the last 100 years. Disturbed by so much that is complicated, unfitting and even positively hideous in the more modern features of our environment, we have acquired the habit of turning for relief to the old-world town or village—or what, in a general way, we call the mediæval city. The fascination we find in the streets and individual buildings that survive in Europe from, say, the twelfth to the seventeenth or eighteenth centuries results largely, I venture to think, from the fact that they show, in the main, natural and simple methods of building, the attempt to meet the practical needs of the time in direct and obvious ways; to the further fact that variety resulted from differences in the use and social or public importance of buildings without necessitating departures—which, indeed, were never thought of—from the general root principles of design and construction, fitness, suitability, and truthfulness that applied to them all; that ornament and decoration was applied in ways inherent to the conditions, and not unnaturally and artificially introduced. Consciously or unconsciously these circumstances led to harmonious effects in building and ensured the quiet charm we invariably associate with periods removed by some centuries from our own. Not only were churches, public buildings, palaces, and houses large or small consistently well-designed and constructed and homogeneous in their general effect, but internal decoration and furnishing, down to the smallest detail, appears to have been equally so and to have embodied the best expression of thought and workmanship. Many pictures have been drawn, more or less truthfully, of life in the Middle Ages, such as, for example, when Ouida, in her essay on "The Ugliness of Modern Life," says: —



Via Ritorta, Perugia

S. Zeno Maggiore, Verona
Entrance Porch, with carved Stonework

"Admit that the poorer people were ill-lodged in the Middle Ages, that the houses were ill-lit, undrained, with the gutter-water splashing the threshold, and eaves of the opposite houses so near that the sun could not penetrate into the street. All this may have been so; but around two-thirds of the town were gardens and fields, the neighbouring streets were full of painted shrines, metal lamps, gargoyles, pinnacles, balconies of hand-

forged iron or hand-carved stone, solid doors, bronzed gates, richly-cloured frescoes ; and the eyes and hearts of the dwellers in them had wherewithal to feed on with pleasure, not to speak of the constant stream of many-coloured costume and of varied pageant procession which was for ever passing through them. Then in the niches were figures ; at the corners there were shrines ; on the rivers there were beautiful carved bridges, of which examples are still left to our day in the Rialto and the Vecchio. There were barges with picture-illumined sails, and pleasure-galleys gay to the sight, and everywhere towers and spires, and crenulated walls, and the sculptured fronts of houses and churches and monasteries, and close at hand the greenness of wood and meadow, the freshness of the unsullied country.

The Spedale, Piazza del Duomo, Siena

It is a pleasant and probably a fairly accurate general impression of the aspect of affairs in the Middle Ages, though we have many authentic historic records of more value than the purely imaginative. To quote two or three of these instances will, perhaps, suffice. There was, for example, the thirteenth century decree for the building of the Church of S. Reparata (now the Cathedral)* in Florence which sets out that " the wisest men of this City do hereby opine and resolve that the Republic will undertake nothing unless with a determination that the performance shall be commensurate with the grandeur of the idea which has emanated from the whole community," in which decree Arnolfo was directed to prepare a plan for a building " of such magnificence that neither the industry nor the genius of man shall be able to invent anything that shall surpass it." To ensure the aim of the State being fulfilled it was plainly stated that if a design of sufficient splendour to satisfy the citizens was not produced it would be rejected.

In Siena, as early as the thirteenth century, when the Palazzo Pubblico was in process of construction, a law was passed requiring all houses facing towards the Campo to be treated in harmony with the Palazzo and to have windows of similar character. Those who know the present state of the Piazza del Campo, after the passing of six to seven hundred years, will agree that the spirit behind the old law has been consistently maintained, and that it continues to be one of the most perfect architectural harmonies in Europe. *A fourteenth century report of the People's Council of Siena states that " In every good City provision is made for the adornment and improvement of the City. And you have this your Piazza of the Campo which is the most beautiful that exists, and you *had* that ornament of the Strada de Banchi . . . such that,

* See *Florence—Her History and Art*, by Francis A. Hylett, and *Walks in Florence*, by S. and J. Horner. 1874.

* See *The Story of Siena*, by Edmund F. Gardner.

neither in Venice nor in Florence nor in any other town in this Country, was there a more beautiful street. Now it is spoilt." The document proceeds to set out how provision is made for four citizens to be appointed to take steps to restore the former condition of the street. So much importance, indeed, attached at that time to the general appearance of Italian cities that Siena had a Council, known as the " Ufficiali sopra l'ornato," which possessed special powers of control in such matters and could even acquire compulsorily houses and sites when these were wanted in schemes for improving the City. A fifteenth century extract from the " Nuovi Documenti " of Siena mentions how " the officers over the Adornment of your City with due reverence set forth that they are continually thinking how to do what may be to the adorning of the City, especially on the Strada Romana where pass the strangers who give praise to all the City." As this was the main street, now the Via Cavour, that contained among other glories the Palazzo Tolomei, the strangers had good reason to praise it. The same applies to many buildings in that city, and one can still point, for example, to the Spedale—founded probably in the ninth century and much enlarged between then and the thirteenth or fourteenth—together with the Sansedoni Palace, as among many instances of the skill and taste of the Sienese builders. One does not need necessarily to be a Gothicist to claim that buildings of this type and the work of the Middle Ages generally show in a marked degree the corporate sense in building—simple and natural in treatment and, whether consciously or unconsciously, calculated to secure an harmonious general effect.

But though Tuscany in the thirteenth to the sixteenth centuries was, perhaps, particularly favoured, its corporate view of the arts may be said to represent, with a considerable share of truth, the general attitude throughout Italy, France, England, Germany and Spain in respect of what may be called the relations between artists and the public. The mass of the citizens took pride in the artistic expression of their city's life ; heads of States, the nobility and learned men, together with the great ecclesiastics of a wealthy and powerful Church, provided ample employment and patronage to the architects, painters, sculptors and craftsmen of their time. Art was then so vital that, as Miss Sichel has said,* " it was fed by every common sight in the streets, by every civic custom and insti tution, first and foremost by those of the Guilds and in turn it gave back with interest what i received. The Guilds stood for more than pic turesqueness. Each under the protection of it patron saint acted not only as a trade-union but a a corporation for conduct. They associated com merce and religion and supported the treaty b laws so stringent that we wonder how any appren tice submitted to them. Architects, painters, an sculptors were craftsmen like any others, and th standard of work so consistently high that th drawing of a defined line between skilled an unskilled labour was hardly thought of." The page of Vasari and countless other records of the times in Italy, France and our own country, testify t the honour paid by the greatest personages in th Middle Ages and the Renaissance to Artists an Craftsmen—to the intelligent interest show by all classes in what may be called the spiritua expression of material things—the creation an maintenance of suitable, fitting and beautifu surroundings to life. It cannot be wondered a that architecture, and all the arts that it com prehends, flourished in such circumstances.

If we turn from this to conditions in the moder town, we need no emphasis of an all too obviou change. If we place responsibility upon the latte half of the nineteenth century for the horrors w see in the shape of street or town architecture, t what can we assign the reason ? We may surmis that the conflict and confusion, the lack of unit or harmony, in our streets is due to the fact tha with the rise of commercial life in the last century and its concentration on inhuman machine made production, building—including what w call the industrial arts—lost connection with nativ traditions ; that, in its place, was put an unintelli gent imitation—the attempt to reproduce orna mental features characteristic of the Art of othe times and countries as a sort of surface treatmen removed more or less entirely from the reasons purpose, or use that originally brought them int being. We see, accordingly, artificial faces t buildings, reproducing stock architectural orna ments, and conveying impressions that they in no wise arise from the practical necessities of the case that instead the designer started off with a pre conceived notion to do a Gothic—Queen Anne— Egyptian—Louis Quatorze—or Moorish façad (quite commonly *merely* a façade), and did s

* *The Renaissance*, by Edith Sichel.

regardless of the merits of the problem that faced him. Paper architecture and draughtsmen's tricks had, in fact, taken the place of natural building, and their blighting effects on the older conception of a sincere creative Art survives in the spurious and unnatural features that still disguise the structures of to-day. As regards shop architecture, Mr. Charles Marriott, in his recent book,* seems to rather defend this. He says :—

" If he is to give satisfaction to his clients, the modern designer of commercial buildings must not only concur in the idea of display but he must also aid in the general hypnotic effect. He must proclaim loudly that Blanks are people. It is not merely a matter of providing more window space, though that is a problem in itself, but of making the whole building look impressive. The architect has to take part in a gigantic game of bluff. His problem as an artist is how to reconcile this with the general amenities of our cities, and, as a rule, he falls back upon juggling with the classical orders. They provide at least a certain decorum in display. That they bear no real relation to the purpose of the building is beside the question ; a shop that really looked like a shop, in modern conditions of shopkeeping, would scandalise the street.

I hope we shall not agree that the architect must necessarily conform to the unnatural cravings of his clients. But we shall certainly be happier, and our streets ought to improve when our patrons are more content to leave the treatment of buildings to those who can develop them logically, suitably and quietly, as used to be the case. The simple and natural in building may be regarded as communal, the aggressively artificial and individualistic as not so, and certainly quite contrary to what Mr. Trystan Edwards, who has said so much that is admirable on the subject, has called " good manners " in architecture. When, to encourage commerce, or for other reasons, men seek personal emphasis, and, in a choice between spiritual and purely materialistic considerations, invariably choose the latter, what chance is there of regard being shown for the general effect of towns, for preserving the beauties of the countryside, for saving old buildings that occur on sites coveted for personal gain—and what opportunities for encouraging the genuine artist-craftsman as against the hack " commercial " artist. Even of similar conditions resulting from industrial developments in Italy it has been said that† " modern movements, modern squares, modern houses, the whitewash daubed on old walls, the cast-iron bridges spanning classic waters, the straight, featureless, glaring, dusty streets, the electric trolleys cutting across ancient marbles, all conduce to make ignoble what was noble, and belittle all that was great." To our usual medley of conflicting house fronts, showing no regard for general environment or for one another, have been more recently added advertising signs of all kinds, including the hideous trappings of the illuminated variety, that go to make what is already confusion worse confounded. In the countryside the same disregard for fitness makes itself apparent, and it is somewhat useless to seek improvement in the

London Street Fronts, near Piccadilly Circus

architectural effect of towns and cities if advertising methods pay no regard to the amenities—whether urban or rural. A perambulation of our business streets is often so painful a process—the more extreme forms of advertising methods so blatant and horrible—that I am constantly surprised that those to whom the appearance of streets is a matter of concern, architects particularly, are content to acquiesce in such disorder. One may instance Piccadilly Circus and the junctions of Tottenham Court Road with Oxford Street and the Hampstead Road as showing present-day contempt for order and fitness. Perhaps, however, we need not despair of even the abuses of spectacular advertising being cured in time. The

* *Modern English Architecture*, by Charles Marriott (1924).
† *Critical Studies*, by Ouida.

work of the Scapa Society—which exists to protect the beauty of the countryside and encourage a due regard for dignity and propriety of aspect in towns—may not be known to all here, but deserves in a special way the gratitude of architects. It has pursued unobtrusively for over thirty years its work for the proper control of display advertisements with more success than the still dreadful appearance of many of our streets might lead us to imagine. One of our Past-Presidents, Mr. Alfred Waterhouse, was, I believe, among its founders, and the very necessary and useful service that this Society performs gives it many claims to our support. We can hardly consciously notice the effects of advertising hoardings and unsuitably placed and designed posters in the central area of almost every town, without regarding it as an evil, from the standpoint we are now considering. Not only, moreover, are we continually shocked by ruin of the appearance of beautiful villages and landscapes through crude advertising methods, but also—as yet another evil of recent times—the placing of the hideous and vulgar dwellings of the town villa type in an environment where their presence is entirely inappropriate. Many old villages and hamlets made up of the simple houses of bygone ages have been spoilt by the intrusion of structures whose characteristics are ostentation and vulgarity. In contrast with this is the common vernacular building of Europe—particularly, perhaps, of Italy; the town and rural architecture that consists of cubical brick boxes, usually plastered, with simple rectangular holes for windows and doors and plain flat pyramid roofs with projecting eaves, in their simplicity constantly quite beautiful both individually and in mass effect. One of the main distresses, indeed, caused by individualism in architecture is that vernacular building has gone—or almost so—and that with this has disappeared the sense of order and unity in streets and homogeneity in towns.

Waterloo Place ("Old" Regent Street) London

I suppose one hardly dare mention old Regent Street—the one really orderly and distinguished thoroughfare that we one-time knew—or even guess at the ultimate effect of its reconstruction. But I am convinced that an acknowledgment of unity, harmony and order in street architecture is essential, and that Nash revealed in a very remarkable way the working out of a valuable principle in his treatment of Regent Street. In streets of the monumental or ceremonial kind I think we must take thought of their treatment as a whole beforehand, and not leave things to chance and the all too common desire of each separate proprietor to outshine his neighbour. A purely monotonous sameness is by no means

essential to the production of fitting and expressive street architecture, but the harmonious relation of parts—if parts there must be—is so desirable as to be almost a necessity. There must be unity of design or homogeneity of character if the streets of cities and towns are to be what we have a right to expect them to be—an equivalent, on a dignified and more magnificent scale, of the qualities shown in the beautiful vernacular architecture, urban and rural, of past ages. For what after all is the characteristic palace architecture of Florence, Siena, Volterra, Perugia and other Italian cities but a more noble and magnificent expression of vernacular building? Though the buildings differ, there is harmony and consistency in their variety. It is, in fact, generally noticeable that, despite differences of period and treatment in the buildings of an old town, one feels no sense of conflict, a curiously happy result of sincere and truthful building. Mr. Marriott appropriately remarks on this point that :—

" When we look at the buildings of the past—up to, say, the beginning of the nineteenth century—we cannot fail to be struck by the fact that, apart from their individual merits, they do as a rule hang together and harmonise with the landscape. The Greek temple, Gothic cathedral or group of monastic buildings, Tudor village and Georgian country town not only exhibit good architecture in detail but also a general amenity. The buildings, even where they cover a considerable period, with consequent changes in style, countenance each other and become their setting. Half the charm of such a city as Bath, for example, is in this twofold harmony."

And Professor C. H. Reilly also has well said* that " The first question to ask about any new building in an important position in a town is whether it pays due deference to its surroundings. Does it enhance the good things already there or does it detract from them? If it does the latter, however interesting it may be in itself, however spirited and amusing, it is not an urbane structure worthy of a city civilisation. It is the fault of a great mass of modern American architecture that each new building is conceived as a thing in itself and is generally of a totally different height, scale and character from its neighbours. Fifth Avenue is full of really beautiful buildings, designed with infinite taste and skill, yet the total result is like a series of museum specimens set side by side. There is no unity, no street, and, in the end, no town. Architects should feel themselves to be a priesthood standing between God and the people. It is their business to translate into material forms only such aspirations of their clients as are worthy. If a client demands a building which, from its size and shape, will destroy a whole neighbourhood and if he cannot convince his client of his folly, he should resign the work."

I am sure that puts the matter very happily, and the question is so important that I am going to quote again from Mr. Marriott's book. Speaking on " Design and Surroundings," he says :—

" At the moment of writing there is an outcry at the threatened invasion of Kensington and Edwardes Squares by the extension of business premises in the one case and the erection of a cinema theatre in the other. What is happening is an inevitable outcome of the expansion of what is called Big Business. Now, if artistic opinion were ranged consistently against Big Business as an ideal, the issue would be clear ; but as a matter of fact, several of the artists and architects who have joined in the protest for Kensington Square are themselves actively engaged in the artistic support of Big Business in other parts of London. They cannot have it both ways. Of course it would sound reasonable to say that it is a question of town-planning ; that you can have Big Business in one part of London and quiet retreats of Queen Anne and Georgian houses in another ; but experience shows that life does not work like that. You may localise activities on the architectural plan, but you cannot localise ideals, and sooner or later one or the other will prevail in the social plan. To put it crudely, if you make a splash in Oxford Circus you must not be surprised if the ripples are presently felt in Kensington Square."

It comes to this, that all our advance in education and our mechanical advantages will never, if the corporate spirit is lacking in developing the amenities of towns, bring what we do up to the truer standard of values that we recognise in the work of past ages. The ills that we see, and that continue, will not be cured except as the result of a common desire for order and fitness and a readiness to make concessions when necessary for the general good. The condition is a spiritual one—a question of the right point of view. I suppose we must conclude that though individuals, here and there, may have some interest in what may be called the spiritual aspect of material things, the great mass of us have not—that to the majority our cities, in the Platonic sense, make no appeal, and such concern as is shown for them hardly reaches beyond the condition of personal advantage. Were such a spirit universal little unity or order would be possible in communal

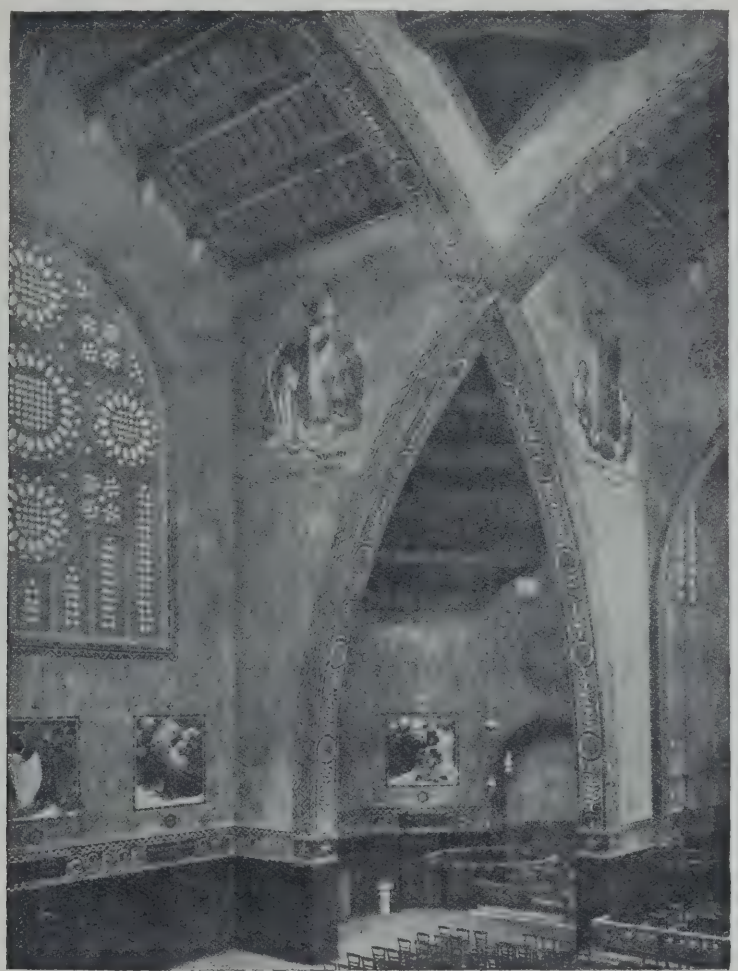
* See *Some Architectural Problems of To-day* and other writings by C. H. Reilly, Professor of Architecture in the University of Liverpool.

life or beauty in cities. The exercise of a discriminating public interest in such questions as the fate of the City churches, Whitgift Hospital, Regent Street, St. Paul's Cathedral and Waterloo Bridge is very desirable if we are to maintain our position as civilised, thinking beings.

There is the further and very important question of properly safeguarding the good work of past ages. Though exercise of the communal sense requires that we should treat such things with scrupulous care, the last hundred years are full of instances of irreparable vandalism in the destruction of buildings; of features essential to their right appreciation; and of splendid examples of craftsmanship. Sad to say, some of the most notorious instances of disregard of works of the past have occurred in Italy, the country most generally associated with artistic distinction. In Rome we might point to the spoiling of the Piazza of San Giovanni Laterano by mean modern buildings—to the destruction of the cloister of Ara Coeli and the tower of San Paolo upon the Capitol in the interests of a modern statue—to the clearance of a large area in one of the most historic quarters of the city so that a site might be provided for the recent Victor Emmanuel monument—to the sweeping away of countless historic houses and gardens of priceless value for both their beauty and associations. The same sort of process has taken place in recent years in the modernising of Florence—where so much of the city dating from the age of Dante has gone—of Perugia, Ravenna, and even Venice, where Molmenti, the statesman and writer, has, among others, lamented the ruin of the island of Saint Elena by the offices, sheds and warehouses erected upon it, "loss of the view of San Giorgio, of the bridge of San Lio, the hideous new wing added to the brown marbles of the Palazzo Tiepolo, the iron warehouse fronting and affronting the Ca d'Oro, the indecent alterations and additions to that jewel of Pietro Lombardo, the Palazzo Corner-Spinelli, . . . destruction of mediæval bridges, of innumerable nooks and corners, historical and beautiful; old wells, old fountains, old shrines, fragments of sculpture and fresco, solemn convent walls, graceful church spires and monastic belfries, parapets, arches, doorways, spiral staircases winding up to hand-forged iron balconies, lamps of metalwork as fine as lace—all these to innumerable extent have been effaced, pulled down, built over or sold." This severe indictment of the loss of a sense of values that nineteenth century "progress," so-called, and industrial crazes have led us into, I have quoted at some length from Molmenti because the cases of Venice and other Italian cities apply in varying degrees to most of the older towns of Europe, including many in our own country. It may therefore not be unsuitable to add to Professor Reilly's and Mr. Trystan Edwards's general plea for good manners in architecture a suggestion that the proper care of old buildings is a necessity in an architecturally polite state, and that it must be equally a question of honour with us to have no part in their destruction. In this connection we ought to readily acknowledge the debt we owe to the Society for the Protection of Ancient Buildings for its valuable work through a period of nearly half a century, and its practical advocacy of sound methods of conservation as against discredited nineteenth century "restoration" methods. It can surely be claimed that those who desire to sustain the established traditional principles and methods of building upon which all true architecture has been founded can never be willing parties to the removal of such work illustrative of it as remain; and if as architects or artists we regard works of to-day as at all worthy of respect, mere self-defence would force us to observe a scrupulous regard for the good works of the past.

Ruskin claimed that "there were two duties respecting National Architecture whose importance it was impossible to overrate: the first to render the Architecture of the day historical; and the second to preserve, as the most precious of inheritances, that of past ages." It would seem that if we fail in the first of these aims it will probably be largely through neglect of the second, which otherwise would continue to show us that the great Art of the past has been, in the main, the simple and truthful expression of its age, and the result of sympathetic co-operation between those who produced it. If the nineteenth century produced no distinctive expression of building, was it because its problems were not frankly faced in an era of make-believe? Even the introduction of steel construction has, until recently, received little acknowledgment in the visible expression of buildings, which continue to show both form and ornament based on the

materials and constructive methods of the pre-steel age. If I may mention just one or two obvious examples of a newer and more truthful tendency, Adelaide House might be quoted. It does not disguise, as so many buildings do, the basic constructive motive. And there is the remarkable French church, on entirely distinctive



Church of St. Louis, Vincennes
An Angle. Droz and Marrast, S.A.D.G., Architects

present-day lines, recently built in ferro-concrete at Vincennes (MM. Droz and Marrast, S.A.D.G.). It seems to recognise not only constructive truth and the relation of form to function but also the corporate principle in building that admits the work of painters, sculptors and others —as well as the part of the architect—in their execution and resultant expression. Along the more sincere lines of such a work as this we may one day develop a twentieth century architecture as well as stimulate a new expression in craftsmanship distinctive of our age. Even as to the position of the art worker and operative workman in the spiritual expression of building, we shall perhaps not now quarrel with William Morris's claim* that in the modern world the craftsman is everywhere subordinate, if indeed he has not largely ceased to exist; and that this forms the reason why the ordinary man, robbed of his chance of creation, has become mediocre. It was on this account that Morris desired a social state in which "the craftsman should be esteemed and powerful; in which the mass of men should wish to be

* *William Morris—His Work and Influence*, by A. Clutton-Brock.

craftsmen and should look for happiness in the practice of some craft rather than in domination or in pleasure pursued for its own sake." The principle expressed in *The Dream of John Ball* is that fellowship is life and the lack of it death, and it may be that the truth of this is more generally acceptable to-day than when Morris lived. Our present Prime Minister has recently said (coupled with a graceful reference to Professor Lethaby) that " the instruments of redemption are the fruits of productive labour and that there can be no other fruits and no other tasks for statesmen than to make an environment in which the workers—by which he meant employers and employed alike—can utilise their gifts for productive labour to the utmost." That is why Clutton-Brock, in his essay on " Art and the Escape from Banality," argues that self-expression is a human need that cannot be suppressed without a host of resultant disorders. It is, in other words, the instinct to express ourselves that provides us with capacity for interest and contentment in life. Have not many architects experienced the ready response of present-day workmen when encouraged to give a personal touch to their work—to lay and joint bricks with a sympathetic interest in the possibilities of that material, instead of as a machine-like and purely mechanical rite—to bring out the essential qualities of stone, wood, metals, plaster, and so on, that are shown by their working and use in ways appropriate to the material, and only attained to by the knowledge born of personal experience. How to reconcile this with mass production of houses—with modern contract methods—and with certain aspects of Trades Unionism is, perhaps, more than any of us can say. But we can still assert that the principle of personal interest in work is essential to the achievement of what is best in any art or industry. Through the unfortunate breaking, a hundred years ago, of a long-established craftsmanship tradition, our methods have ceased to be intuitive. The sense of personal interest on the part of all who make and do things needs therefore to be re-established, together with a realisation that, as Clutton-Brock said, Art—the whole process of expression—is not a luxury, but a necessity in which even simple men may share. It is proceeding from this principle that, for example, Mr. Ernest Gimson, Mr. Alfred Powell, and others have in recent years carried out building on traditional lines with relatively untrained country labour. It was what may be claimed to have stimulated the new turn that Philip Webb and Norman Shaw gave to house building fifty years or so ago. Indeed, I venture to think we have to be grateful to the Morris movement for many things, and among them that—in addition to the S.P.A.B.—it produced the Art Workers' Guild, and through that fact has exerted a most valuable influence in preserving what is best in the old, and developing what is best in the newer, aspects of our Architecture. For, as has been said,* " the arts which go to the creation of beautiful buildings should occupy the hands and thoughts of thousands if properly encouraged by the public and would, if rightly directed, do much to add to the vitality and interest of modern Architecture. Beautiful brickwork, plaster, woodwork and metalwork ought to be within the reach of thousands who have now to be content with characterless, commonplace, mechanical productions. If, in the first place, we can secure honest, simple, and expressive work, directed by good design, we may surely hope the public will respond by encouraging a demand for it." And, put in another way, we have a similar claim made by Mr. Gerald Horsley,† a generation ago, that " if art is ever to become once more a genuine and spontaneous expression, there must be a complete accord and unity between all artists and handicrafts. The architect must be one of a body of artists possessing an intimate knowledge of the crafts ; and no less, on the other hand, the painter, sculptor, and other craftsmen must be in direct touch and sympathy with architecture. There must be a real communion, a common understanding, and a working together towards the highest and best aim."

And may I add, to whom should craftsmen more naturally turn for advice, encouragement and, what may be called, discriminating employment than to architects, who, if they view correctly the art they practice, should be able to rightly value and lead to the best use such talent or skill as mural painters, sculptors, and other workers in the crafts allied to architecture may display? The life of Sir Christopher Wren furnishes many examples of the advantage gained by an architect's use of

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* In Mr. T. Raffles Davison's Introduction to *The Arts Connected with Building.* Batsford (1909).

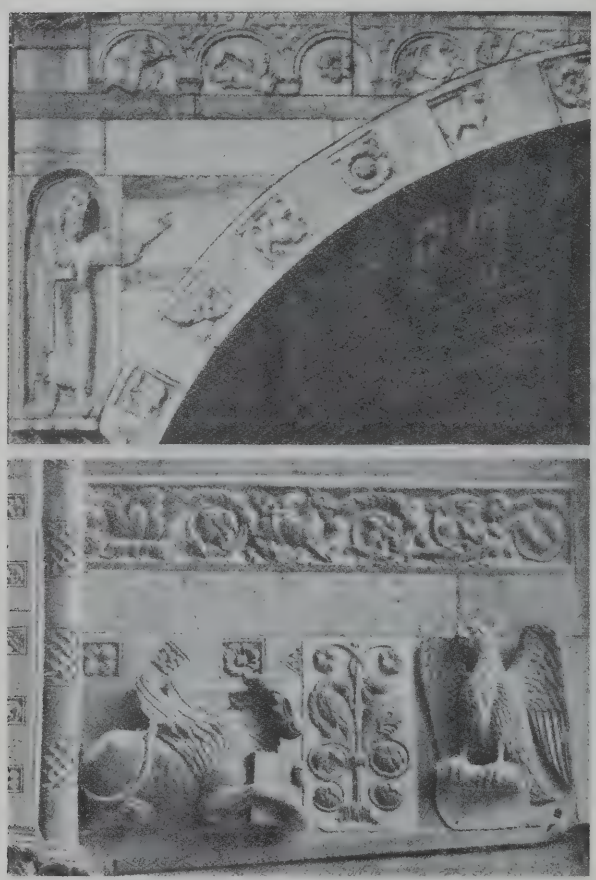
† See *Architecture—a Profession or an Art,* edited by R. Norman Shaw, R.A., and T. G. Jackson, A.R.A. (1892).

the corporate sense in his relations with those upon whom he depends for execution of his designs. Biographical history fully confirms, indeed, a practice always accepted as essential to the production of great works in architecture, and that broadly distinguishes architecture as an art from building pursued as a mere business. Craftsmen everywhere should accordingly be able to look to architects as their natural protectors and, in the best and fraternal sense, their patrons, with the prospect of results from such co-operation distinctly to the advantage of the all-embracing Art of Architecture. For out of the general mass of mediocre work of to-day it is not difficult to find, in every craft, the work of living men comparable in its artistry and skill with the products of the great periods of the past, and we should be doing less than justice to contemporary work not to confidently assert that claim.

Piazza Santa Croce, Florence. Painted Façade

But there is another aspect of this question to which Mr. Goodhart-Rendel recently, and quite appropriately, drew attention. He criticised the excess of vulgar carved ornament from which so many of our buildings suffer, the paring off of which would, he thought, be much to their advantage. We are constantly brought face to face with evidences that he is right. Besides stone carving we see much tasteless and unsuitably treated ornament in the form of metalwork, woodwork, plasterwork, alleged mosaic and stained glass, and so on, that merely speaks of a restless, advertising age that mistakes ostentatious complication and the vulgarly superfluous for beauty. The saying is attributed to Michael Angelo that "beauty is the purgation of superfluities," and the statement bears on its face the evidence of truth. We can compare it suitably with Goethe's definition of ideal beauty as a combination of simplicity and tranquillity—which attributes we could do with more of to-day. But I am not desiring to restrict ornament and decoration, but rather to vary its distribution and character. We might well dispense with the vulgar, commercial rubbish and with all ornament that is misplaced and unnecessary, while insisting that what we have should be natural to the conditions, suitably and judiciously placed to produce its right effect, and, of course, the acknowledged work of genuine craftsmen. Why, moreover, are the exteriors of

our buildings so universally denied patches of colour and gilding—our interiors so devoid of mural painting (particularly "*buon fresco*"), a great and ancient art productive of rich, interesting and lasting effects—why so little use of coloured and leaded glazing of the right sort that even in small quantities, can be productive of so much charm—why so little genuine mosaic work while a few



DUOMO, VERONA. STONE CARVING ON ENTRANCE PORCH

craftsmen remain to prove it is not yet quite a lost art? And do we not in metalwork still see more often than need be the tasteless products of the commercial manufacturer rather than of the tried and understanding metal-worker? It can surely be said, too, that for a century the architect has, in effect, withdrawn, or been excluded, from responsibility for the internal decoration and furnishing of the buildings he designs, and that it is time these matters should come to be again regarded as within his province and not left to the tasteless tinkerings of the furnishing broker—with the disastrous results that many otherwise beautiful buildings show. The idea that an architect provides the structure and a tradesman (in the present-day sense) does the rest is, in principle, wrong.

We have, in fact, to admit being a long way from knowledge of the crafts indicated in such works as those of Theophilus, Cennini, Alberti, Benvenuto Cellini, and Vasari's treatise on "Technique"—where the latter sets himself to instruct "every gracious spirit in the most noble matters that appertain to the artistic professions," and ". . . for his delight and service to give him to know in what qualities the various masters differed among themselves and how they adorned and how they benefited each in his own way their country," with the ultimate aim of enabling anyone that will to gain advantage from the labour and cunning of those who in times past have excelled in the Arts.* Even in his *Lives* Vasari shows a wide range of knowledge of the crafts, but here he displays a detailed acquaintance with scores of artistic processes, from the working of stone and marble to the treatment of egg-shell mosaic, and from concrete vaulting to an analysis of the essential qualities of sculpture, from *rocaille* work in gardens to the subtleties of *buon fresco* and painting in tempera. I rather press the example of Vasari because he reveals in the course of his writing how much more generally a great variety of artistic processes were applied to buildings and their decorative completion than is the case to-day. Many crafts practised in his time are now almost lost for want of opportunity to apply them. How little we see now, for example, of the art of mosaic, of real fresco, of sgraffito, of modelled plaster used externally (as in the Spada Palace at Rome), and how little even of stained and painted glass. Why should the decoration of modern buildings be almost limited to moulding and carving, so much of which, as we have already said, is both tasteless and superfluous? Architects might often, to a much greater extent than they do (I am not speaking, of course, of these specially "lean" days) provide opportunities for sculptors, mural

* See *On Technique*, by Giorgio Vasari, translated by L. S. Maclehouse, with Introduction and notes by Professor G. Baldwin Brown.

painters, artists in plaster, leadwork, mosaic, stained glass, inlay, and so on—even though to do so we may have to forgo columns and pilasters that serve no functional purpose and are a misuse of the emphasis that should attach to the classical orders, and to dispose of a similar condition of redundancy that applies to our masses of strings, dentilled cornices, rusticated masonry, turrets and cupolas with no relation to structure, panels, cartouches, swags, and the other stock survivals of Victorian hypocrisy and excess.

Greek and the Gothic ideal; and was also splendidly sustained in the best phases of the Renaissance.

Such, then, is the general case I have ventured to present to you—that old buildings should be preserved both for themselves and the example they put before us of how to do things well; that our own work should be sound, simple and sincere in its expression of plan and purpose; that it should embody and acknowledge the best craftsmanship at our command, having in mind

No. 1 Palace Green, Kensington, Dining Room
Philip Webb, Architect. Colour decoration by Wm. Morris & Burne-Jones

A building may well acknowledge, by the impersonal character of its treatment, that many craftsmen are concerned with it. Recognition of the architect as a dominating factor in the general conception and execution of buildings still does not set aside the propriety of providing for and acknowledging the work of others in the method of their expression—constructively and decoratively. As Professor Lethaby reminds us, "Good architecture is masterly structure with adequate workmanship; the highest architecture is likely to have fit sculpture and painting integrally bound up with it." It was the

that only by such means will the old intuitive sense for the practical and artistic use of material be restored—coupled with consideration always, as I think naturally follows, of such claims as environment and homogeneity of character in cities have upon us. Along such lines, and by means that give recognition to order, regularity, unity and beauty in cities, can the Corporate Spirit in Architecture—using that term in its widest sense—be expressed. If, therefore, architecture is, in any real sense, mother of the Arts, would it not seem natural that this Institute, now so strong numerically, and, in that sense, so influential, by co-oper-

ating in a closer and more definite way than at present with those whose aim is allied to its Charter purpose—such bodies as the Art Workers' Guild, the Society for the Protection of Ancient Buildings, the Arts and Crafts Society, the Civic Arts Associations in London and elsewhere, the Town Planning Institute, Royal Society of British Sculptors, the London Society, Scapa Society, Society of Mural Decorators and Painters in Tempera, Society of Master Glass-painters, and so on; with all, indeed, who collectively or individually are encouraging and assisting what is best in either the more detailed aspects of building or its ultimate general mass effect—should take a definite lead towards ends obviously to be desired if the comprehensive corporate conception of the building art is to be restored. A common policy towards a common end is required if that aim is to be achieved.*

"Great building," it has been truly said, "is not the realisation of the design of an individual, but the produce of a crowd of workers, conscious of a common aim and co-operating for its achievement." Or, as Professor Lethaby,† to whom we owe so much for right views on the craft of building, puts it, "If ever we are to have a time of architecture again it must be founded on a love for the city, a worship of home and nation. No planting down of a few costly buildings, ruling some straight streets, provision of fountains, or setting up of a number of stone and bronze dolls is enough without the enthusiasm for corporate life and common ceremonial. Every noble city has been a crystallisation of the contentment, pride and order of the community." Or, as he expresses it in another place,‡ "To build cities and live in them properly is the great business of large associations of men. The outward and the make must always be exact pictures of the mind of the makers. Not only is this so at any given stage, but it is so all the more in a going concern, for the outward is always reacting again on the inward, so that the concrete becomes a mould for the spiritual. Man builds towns so that the towns shall build his sons. As the old Greek said, 'The city teaches the man.'" Could anything be more true or more important to us than this? Epictetus surely had such a condition in mind when he said that "if Reason should rule in cities it is better certainly for great souls to inhabit small houses than for mean slaves to lurk in magnificent mansions, just as the Eubaens and Spartans did not build or repair their walls with stones only, but with discipline and zeal for good works, the visible ornaments alike of cities and of rulers—so that, flourishing and peaceful, they made the Republic by uniting together not logs and stones but living souls." It is only as the result of such a social attitude that we can expect to attain to noble cities and orderly streets and houses, the latter, we may hope, with nothing within them eventually but what conforms to the Morris ideal of universal utility and beauty. It is what the late Prime Minister called the "spiritual correctness" of our point of view that counts in this problem. It was what counted when Plato wrote his *Republic*—what counted when the Greeks achieved that universality of beauty in all that touched them that has, perhaps, never been so definitely attained since; what persisted, indeed, in all periods and phases of life that separated art from barbarism—and it is such a condition that may one day enable us to claim for ourselves what, according to Thucydides, Pericles assumed for the Athenians—"To be lovers of beauty without extravagance and lovers of wisdom without unmanliness—to show that wealth is not mere material for vainglory but opportunity for achievement."

* *Man and His Buildings*, by T. S. Attlee, M.A., A.R.I.B.A.

† *Architecture—the History and Theory of the Art of Building*, by W. R. Lethaby (Home University Library).

‡ *Form in Civilization*, by W. R. Lethaby (Oxford University Press).

(The discussion which followed Mr. Hiorns' Paper will be published in the next issue of the Journal on 4 April)

Reviews

SIXTY-THREE YEARS OF ENGINEERING.

By Sir Francis Fox. [*John Murray*, 1924, 18*s. net.*]

The perusal of this book has brought to my mind a remark of a learned friend: "When I have to review a book I always want to read it through." This has by no means been the present reviewer's general experience, but in this instance he certainly has wanted to, and has practically read the book through.

The author gives in the 333 pages of his book not only what is practically his life history as far as his professional work is concerned, but also descriptions in lay language of some of the most famous engineering undertakings of our own time, while pleasantly interwoven are many personal and social touches which place the book in a different category from those devoted simply to impersonal engineering descriptions. We have as an introduction an account of the Crystal Palace as erected for the 1851 Exhibition in Hyde Park by the author's father. Railways and tunnels naturally occupy a large section of the book, and these descriptions range over such diverse topics as the Snowdon railway and the London "tubes." Of great interest is a chapter on the work at Winchester Cathedral, which occupied seven years, and among the descriptions of other cathedral repairs the author's views on St. Paul's will naturally be read with interest at the present time, more especially by those who, like the reviewer, had the privilege of being taken over the cathedral by the author before the war and shown the work of measurement and reconstruction then in progress. In the last eighty pages the author, leaving engineering undertakings, gives an account of some social work in London and introduces some personal experiences which are interesting, if somewhat discursive. This book, both as a record of engineering achievement and as a pleasant historical review of the period under description, should find a welcome place on many shelves which look down upon the easy chair. The illustrations, photographic and diagrammatic, are good, while the type and general style of the book are worthy of Mr. Murray. ALAN E. MUNBY [*F.*].

THE LAW RELATING TO THE ARCHITECT.

By A. H. M. Brice, of Middle Temple and the Oxford Circuit. Barrister-at-Law. Recorder of Tewkesbury. London, 1925. [*Price* 10*s. net. Stevens and Sons.*]

A volume of some 160 pages; it is for the service of those who may be called upon to consider the many and varied legal problems which active practice of the architectural profession has never failed to raise. The duties of the architect, exercised as they are on a constant equipoise between the contractor and the building owner, as well as in the discharge of many delicate functions, are peculiarly subject to legal conditions and involved in legal relationships. The book under review is free from technical terms and embraces the status and duties of the architect; the limits of his authority; the conditions affecting his certificates; his relation to contractor, building owner, quantity surveyor and public authorities; his drawings and specifications, with the duties and warranties in connection with them; the remuneration he is entitled to claim and recover; his function as an arbitrator, and, finally, the revocation of his agency as architect, whether by bankruptcy, death, the notice of his employer, his own renunciation, or the natural termination of his employment.

The chapters are followed by appendices giving the Institute Professional Rules, charges and competition regulations, and these in a future edition will, no doubt, be somewhat varied or enlarged.

Probably the most interesting chapter is that on the subject of arbitration, this increasingly popular method for the settlement of differences and disputes, and here the learned author, by quoting undisputed authorities, clearly differentiates between the architect acting in his administrative capacity as a valuer or appraiser and the judicial mind his position demands when he occupies the chair of an arbitrator. He further refers at length to the Rules and Procedure prepared by the Society of Architects in 1923 as useful and practical for the governing of arbitrations affecting professional and building matters, and the material clauses are reprinted together with the schedule of charges.

The book is one which architects in general practice will find interesting, and to students preparing for the professional practice side of the final examination it can confidently be recommended as instructive.

W. E. WATSON [*F.*].

THE NATURE, PRACTICE AND HISTORY OF ART.

By H. Van Buren Magonigle, Fellow American Inst. of Architects, etc. [*Charles Scribner's Sons*, 1924.]

To avoid the encyclopædic and to present his information in literary form has been the author's aim, and it may be said that he has satisfactorily accomplished it. Indeed the general design of the book suggests a comparison with a well considered architectural plan.

To compose a review of art from the masterpieces of architectural and pictorial effort to the little practised art of monotype, and at the same time to afford some insight into technical procedure, is to cover a ground of no small proportions.

The historical outlines are well considered, and the processes of the several arts clearly described. The methods of modelling, casting, and pointing as carried

on in the sculptor's studio, or the various stages in the production of an etched plate, for example, should be acceptable to the generality of art students, to whom the book is addressed. In his personal outlook, too, the author's appreciations are modern and sympathetic. And he administers some well deserved raps, as when he criticises mechanical reduction in the case of medals, comparing the result with the broader effects achieved by the Italian medallists. He discourses on values and tones—the intrinsic properties of light—and is so led on to an estimate of Ver Meer which should gratify Mr. E. V. Lucas. Whether Monet's synthetic method of building up tones was that employed by the Greeks in their temple colour-schemes, we cannot pretend to decide. The suggestion has at any rate the freshness of novelty.

Where Mr. Magonigle seems most to feel his limitations of space, is where he attempts to draw analogies between artistic expression and national characteristics. His examination of Greek art leads him to the hurried conclusion that an austere repose was the outstanding quality of the Athenian. Yet we remember some Persian ambassadors complaining that the Greeks were a people who could neither rest themselves, nor allow anyone else to rest. In truth *l'elan vital* ran at a prodigious pace among them, and the simplicity that so predominates in their sculpture was probably due to the rapidity with which they grasped essentials rather than to any contemplative processes of elimination. Again, can we attach any moral importance of a national kind to the somewhat frivolous creations of Boucher? There was surely Chardin to set against him. "No, no, *mon ami*," says Anatole France, "short of changing the French, there is nothing in France to change."

Tradition is so lightly valued nowadays that the author's regard for it may be especially welcomed. Yet we are sometimes pulled up sharply by the utterance of dogmatic preferences. To call the Colleoni statue "the supreme equestrian figure of the world" is not conclusive while Donatello's statue still stands in Padua. And to speak of Reynolds and Gainsborough as bad painters appreciated only in England, and the inferiors of Lawrence, voices a curious idiosyncrasy.

As a critic, he should be aware that to brush aside established reputations and lightly to launch a contrary estimate is simply jejune. Such an opinion is not shared by some others, at least, of his own countrymen, since works of the elder masters, secured at huge prices, continue to cross the water. C. J. Tait [*F.*].

MERSEYSIDE.—*A Handbook to Liverpool and District. Edited by Alfred Holt, M.A., D.Sc.*

Mr. Holt points out in his foreword that the aim of this handbook is to present a survey of Merseyside in its various aspects, municipal, industrial, and scientific, rather than to dwell on Liverpool and its immediate environs. This aim is achieved admirably in a series of interesting articles by experts on the subjects dealt with, the two articles which will appeal most strongly to readers of this journal being possibly "Engineering Development in Liverpool," by John A. Brodie, the distinguished city engineer, and "A Note on the Architecture of Liverpool," by C. H. Reilly, the eminent director of the Liverpool School.

It is interesting, too, to read of the manufacture of smalt and its cheaper substitute ultramarine in a very concise and descriptive article on the "Chemical Manufactures on Merseyside," by F. C. Guthrie, M.A., F.I.C., and W. Doran, M.Sc., A.I.C.—how Messrs. Rawlins and Son (Ultramarine), Ltd., produce many different qualities, amongst them being those suitable for soap mottling, laundry blue, paint, paper-making, litho ink, bleaching and other purposes. When we are next in difficulties over the unsatisfactory settlement of ultramarine from our palettes we will be reminded of Liverpool and its earlier manufacture. Again, geologists will be interested by the photographs of a slab of Keuper Sandstone from the Storeton quarries showing impressions of footprints, plant stems, suncracks, ripple marks, etc., one of the many interesting illustrations of this little handbook.

Finally, one lays down the book with the impression that Mr. Alfred Holt has provided prospective visitors to Merseyside with a singularly comprehensive guide to the more salient features of interest which go to form what is termed to-day a prosperous commercial seaport and manufacturing centre. That the book will be interesting to architects and useful to town planners is the impression received from its first reading. W. N. Adams [*A.*].

OUR DEBT TO GREECE AND ROME—ARCHITECTURE. *By Alfred Mansfield Brooks.* [*George Harrap and Co., Ltd. 5s. net.*]

This book is one of an excellent series. It is concerned with what has gone to make the inheritance of modern architecture. It is addressed rather to the layman than to the architect, and, as Sir Reginald Blomfield points out in his preface, no attempt is made "to give a detailed account of Greek and Roman architecture." What Mr. Brooks "is impressing on his students is the spirit at the back of it." Buildings are described to illustrate the points which the author wishes to make. That "tireless will to perfection" shown by the Greeks is contrasted with the constructive and practical spirit of the Romans in tackling the problems ever present in a great state. In discussing the architecture and town planning of the Hellenistic

age, Mr. Brooks points out that it was this rather than the architecture of Hellenic Greece itself which had such a profound influence on Roman architecture. It is a welcome volume and will be read with great interest by all. H. C. B.

Correspondence

TOWN PLANNING IN NEW ZEALAND.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—I was much interested in Mr. Johnston's valuable account in the JOURNAL of 21 February 1925 of the New Zealand Institute of Architects and the progress which has been made in the Dominion since the days when the early towns were so excellently laid out by the New Zealand Land Company and other pioneers.

Mr. Johnston, however, hardly does justice to the work which has been done in recent years to further town planning ideals in New Zealand.

The New Zealand Government itself has done a great deal, following on its enthusiastic support of the campaign of the Garden Cities and Town Planning Association in 1914. In 1918, Mr. S. Hurst Seager [*F.*] was sent, as the delegate of the New Zealand Government, to the Brisbane Conference and made a valuable report which was circulated by the Government to every Local Authority in the Dominion and a great deal of valuable publicity obtained.

In May 1919 the first New Zealand Town Planning Conference and Exhibition was held in Wellington. Some 300 delegates were present, and, from a paper read at that meeting by the Assistant Under-Secretary of Internal Affairs, it is clear that, although an actual town planning Act has not yet been placed on the Statute Book, very considerable progress has been made in achieving the same ends by other means.

For many years there has been a special department of Government dealing with the preservation of natural scenery and objects of beauty. River valleys and river banks are also automatically reserved for a reasonable width on each side, both for the protection of the water from pollution and the preservation of amenity, and this example might well be copied in other parts of the Empire.

Under the New Zealand Land Act the lay-out of towns is controlled by Government, and no estate can be laid out for sale except with Government approval. The number of houses or plots to the acre is also limited, 10 to the acre being the absolute maximum and 4 to the acre much more usual.

Surveyors have sometimes contended that they are limited by the Land Act to 66 feet roads and rectangular lay-outs, but, in practice, the Surveyor-General has discretionary powers to sanction any plan not strictly in accordance with the statutory provisions. It has also sometimes been contended that no curved street can be laid out in New Zealand, owing to the requirement of the Land Registry that the compass bearing of a street shall be recorded. The interesting plan prepared for a development at Wanganui by Mr. Hurst Seager and Town Planning schemes for Auckland, however, show that where there are enlightened architects, there is also an enlightened Government Department who will support them. It is gratifying also to note that the New Zealand Government are arranging their own housing schemes on Garden City lines.

The Municipal Corporations Act and its extensionn give power to all Local Authorities in the Dominios to control signs, placards, etc., within their area, and this legislation, although not at present retrospective, shows that the Dominion Government is alive to the need for proper control of town development. There are probably more local town planning and civic associations in New Zealand than in any other part of the Empire, although they go by various names. The Christchurch Beautifying Association, the Dunedin Amenity Association, and other local associations in the principal towns may be mentioned, and under the energetic lead of the New Zealand Institute of Architects, as Mr. Johnston well says, " the field is wide open for the town planner."

W. R. DAVIDGE [*F.*].

THE LIGHTING OF PICTURE GALLERIES AND MUSEUMS.

81 *Dean Street, Oxford Street, W.*1.
19 *March* 1925.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—Referring to the letter in the JOURNAL of 7th inst. on the above subject, it would appear that Mr. Markham has failed to appreciate that there are two distinct forms of distracting reflection in picture galleries as ordinarily designed.

The first and the most powerful is the specular reflection of the bright glass of ceiling or roof lights. This can be avoided by keeping the whole of the picture glass outside the plane of specular reflection from the spectator viewing the picture from suitable positions, and can be effected by

(*a*) Keeping the pictures low, and, or

(*b*) Tilting their top edges forward.

The extent to which each or, if necessary, both of these remedies must be applied depends upon the cross-section of each particular gallery, and can be ascertained by simple geometrical projection.

The second type of reflection is that which comes from objects nearer to the floor, such as the faces or dresses of spectators or even well-lit pictures on an opposite wall.

These cannot be dodged by geometrical treatment, and the only cure is to throw as much light as possible on the picture and as little as possible on spectators or other objects which could be reflected from the glass into the spectator's eyes. Glass reflects only some 5 per cent. or 6 per cent. of the light incident upon it ; but when spectators and picture both receive the strong illumination of an ordinary lantern light, and the picture is a glazed dark oil painting, the colours of which have a coefficient of reflection of, say, 3 per cent. to 10 per cent. only, then the light reflected from the colours of the picture behind the glass (by which alone they can be seen) is not sufficient to overpower—and may even be weaker than—the images reflected from the glass, which latter then become visible and insistent.

Mr. Markham's suggestions appear to be directed to curing this second evil by tilting the plane of the glass upwards towards a high neutral tinted unoccupied wall space opposite, above pictures and above the heads of spectators. But this would surely in most cases obviously invite trouble of the first kind from ceiling lights and the like in that neighbourhood.

Satisfactorily complete immunity from both types of reflection can only be secured by treating each malady separately, but simultaneously with its appropriate remedy. The first by keeping outside the geometrical limits of specular reflection from roof lights and high white cornices, which geometrical limits, of course, vary with any inclination of the picture glass ; and the second, as proposed by Mr. Hurst Seager, by keeping the spectators, etc., in fairly deep shadow and by screening off, as with a vertical unoccupied partition, any view of bright objects on an opposite wall.

Both cures involve more or less apparent waste of possible wall space ; and the somewhat bold planning necessary will probably only become possible when it is recognised that national and civic art collections should never be crowded, even if they have to be subdivided into additional new galleries. One crowded gallery, however renowned, in the centre of a town can never have the same æsthetic and educational value as two or three galleries, scattered, if necessary each containing fewer pictures, but all visible.—Yours truly, PERCY WALDRAM, *Licentiate.*

BRITISH SCHOOL AT ROME.

EXHIBITION OF PRELIMINARY DRAWINGS.

BY W. HARDING THOMPSON (*A.*)

In the Royal Academy Galleries at Burlington House the works submitted in the open examination for the Rome Scholarship were exhibited this month. Nineteen competitors were admitted to the preliminary examination in Architecture : it is satisfactory to have this evidence that there are many students in our schools who are prepared to take the opportunity of three years' study and travel in Italy.

The subject set for Architects was "a Commemorative Gateway to a Walled and Moated Town devastated during the Great War." The programme was clearly defined, yet several competitors ignored the information given regarding the height both of neighbouring buildings and the existing ramparts.

As a great avenue 150 feet wide approached the town through the gateway and terminated on the climax at the Cathedral, this suggested to many the idea of twin pylons, rather than the more traditional form of mediæval gateway with its somewhat restricted opening. The virtue of the arch motif is that the memorial seen from any point in the park would appear as a unit, whereas the pylons require the spectator to stand on the axial approach in order to see the Cathedral, which completes the composition. Seen from the Cathedral, the arch would close the vista adequately.

Mr. Minoprio (No. 29) is the only competitor who has followed the Verona precedent, but the result, although safe, was unimaginative and the presentation poor. In contrast with this traditional solution Miss Macfadyen (No. 15) has designed an arch of fine scale to be built in brick, sympathetically handled in relation to the adjoining walls, yet avoiding any suggestion of militaristic character. The effect is a highly imaginative composition spoilt slightly by such details as the excessive projection of the side wings. This makes the entrances for pedestrians appear as square-shaped tunnels.

Mr. Scarlett's design (No. 20) is too grim as a symbol of peace : one is led to believe that the crushing mass of masonry over the wide arch must encase a mediæval portcullis. The drawings are meticulously rendered in pencil, in a manner reminiscent of the Beaux Arts during the nineteenth century.

Mr. Briggs (No. 21) is fortunate in being selected for the Final. His rather insipid design for a Gothic gateway is unworthy of being a twentieth century portal to a great city. Firing slits in the parapet of a modern gate are not required.

Mr. Butling's drawings (No. 26) show the influence of Sir Gilbert Scott's fine Gothic work at Liverpool, and they are in themselves examples of the high standard of draughtsmanship usually associated with the Liverpool School. One might object to the excessive height of the two pylons of this design (nearly 100 feet), and the abrupt termination of the side arcades gives an unpleasant silhouette seen in relation to the town walls : otherwise the design has fine imaginative qualities.

Mr. Spencely (No. 28) seems but little inspired by the heroic efforts of men in that war-stricken city, for his towers form a gateway lacking in character as a memorial, and the archways are almost too small to be entrances even to a college quadrangle. Compare this design with the virile essay by Mr. Morgan (No. 27), which, though too big and suggestive of pre-war Germany, has a very positive character.

Mr. Willis (No. 32) sets his stage in Italy and suggests the atmosphere of Siena with all the gay heraldry from the Palio used as motifs and patches of colour over the simple brick archway. Mr. Astbury (No. 33) from a poor esquisse developed a somewhat elaborate composition, with two memorial courts and colonnades built over the

moat: these courts were hardly suggested by the programme, but show evidence of a definite idea. Miss Silcock (No. 16) apparently failed to enter the Final owing to a very nebulous esquisse; also the two large gate piers supporting lions reminiscent of Trafalgar Square would not produce a memorial worthy of the site. Some of her drawing is undoubtedly good.

Several competitors designed high archways and pylons only suitable as terminals for a steel suspension bridge over a river. Of this type were No. 18 (Mr. Wills) and No. 23 (Mr. Stewart Thomson) both of interest, but not as solutions of this problem.

The design No. 17 is much below the standard expected in the Rome Scholarship: colossal attenuated angels, standing on inadequate bases through which pedestrians go, are not desirable, nor is the vertical division of the structure into two equal parts. The authors of the designs Nos. 19, 25 and 30 would be well advised to enter for some of the lesser prizes offered by the R.I.B.A.

Mr. Thearle's scheme (No. 31) is too elaborate and too big, while Mr. Heald (No. 24) has undoubtedly failed to achieve success with his beautiful draughtsmanship and sound design owing to the fact that his esquisse contains no suggestion of the finished product. Mr. Crossley's sketch (No. 22) was also much too vague to be accepted as a forecast of the interesting design to follow.

For the Final Competition Liverpool University has four selected, Manchester University three, London University one, and the Architectural Association one.

Turning to the Sculpture, the Exhibition of the 1924 Final Competition shows clearly that the modern school of sculptors has travelled far from the Victorian viewpoint of individualistic realism towards the goal of collaboration in all the plastic arts. The four panels exhibited are inherently architectural in conception, particularly the design by Miss Pamela V. Harris, framed in a well-proportioned doorway, also the more fully modelled composition by Mr. J. R. Skeeping (Rome Scholar 1924) forming part of a portal of more domestic character.

This year's open competition in Sculpture also includes some excellent low-relief panels of great decorative value by Messrs. Emile Jacot and Archibald B. Ingram, and all five competitors give evidence of skill and technique.

Among the painters there appears some lack of appreciation of the inter-relationship of the visual arts. In the designs for interiors one notices too often that the architectural details are indifferent reproductions of " period " rooms, while the painted panels are sincere essays in the modern spirit. Unfortunately much of the painting exhibited is not up to the standard required in decorative work, nor is it fair to judge results unless each panel is placed in situ in its appropriate environment.

There are two examples of work of Rome Scholars who have completed the tenure of their Scholarships, of particular merit being the Restoration of the Mausoleum of Hadrian by Mr. S. Rowland Pierce. Mr. Pierce's drawings have real archæological value and represent solid scholarship work. The drawings are delicately rendered, sympathetic to the subject, and they possess all the character and virtues of eighteenth century draughtsmanship.

FRENCH APPRECIATION OF THE LATE MR. PAUL WATERHOUSE, PAST PRESIDENT.

By *M.* J. Godefroy.

The following appreciation of Mr. Waterhouse by *M.* J. Godefroy, the eminent French architect, appeared in the *Bulletin* of the S.A.D.G. on 1 February,

Notre grande famille de l'Union Franco-Britannique des Architectes a été péniblement affectée d'apprendre la nouvelle de la mort de son Président, M. Paul Waterhouse, qui vient d'être enlevé subitement à l'affection de tous. Comment les membres français de l'Union ne se trouveraient-ils pas unis à leurs confrères anglais dans leurs sentiments de regrets les plus profonds, en cette circonstance douloureuse! Paul Waterhouse jouissait en France autant qu'en Angleterre d'une haute considération qu'il devait autant à l'élévation de son caractère qu'à la valeur de son talent. Il unissait les qualités d'un cœur chaud et généreux à celle d'une âme d'artiste; l'érudition savante n'avait pas émoussé en lui la finesse de la sensibilité. Il était de ces hommes qui répandent autour d'eux un chaleureux rayonnement et qui, dès qu'on les approche, suscitent la sympathie la plus vive. Mais il était encore pour nous quelque chose de plus: un grand ami de notre pays, qui avait été l'un des artisans les plus actifs de cette union de nos architectes qui annonça une union plus intime: l'alliance de nos deux nations pour défendre la civilisation.

Paul Waterhouse fut, est-il besoin de le rappeler, un grand architecte. Il avait débuté sous la direction de son père Alfred Waterhouse, dont la renommée est considérable à Londres. Bientôt il devint son actif collaborateur. On citera longtemps parmi les ouvrages qu'ils exécutèrent en commun: *l'Ecole de Saint-Paul de West Kensington, l'Ecole de Sainte-Marguerite de Busley, l'hôpital Rhyl, le hall de l'Université de Balliol.* Cependant, c'est dans les œuvres qu'il éleva seul, qu'il devait révéler le mieux l'originalité de son talent: *les importants laboratoires des Universités d'Oxford, de Manchester et de Leeds, l'Ecole de Médecine de l'University College et le home d'infirmières de Londres.*

Mais ce n'est pas à des ouvrages à destination scientifique ou hospitalière qu'il borna son activité artistique; l'architecture religieuse l'attira avec bonheur; il construisit notamment le *Couvent de l'Incarnation* à Oxford et l'église *de All Saints* à Saint-André.

Il succéda à son père comme architecte de la Société d'assurances *Prudential* et de plusieurs maisons de banque, telles que le *Lloyd* et *la National Provincial*, dont il construisit les succursales de Paris et de Bruxelles, sans parler de nombreuses constructions privées qui font apprécier l'excellence de son goût parfait et de son esprit d'adaptation.

Il fut notamment un des apôtres les plus actifs de l'*Urbanisme*, science nouvelle dans laquelle nos amis Anglais nous ont depuis longtemps précédés et qui étudie les moyens les meilleurs d'assurer l'hygiène et la salubrité à la cité, qui veut agrémenter la demeure, " le Cottage," qui donnera le bien-être, s'occupe de tout ce qui peut rendre plus plaisant le home familial.

Ce qui caractérise son architecture, c'est la faculté qu'il avait d'unir la tradition, qu'il tenait de sa haute culture, à une originalité qui lui était si personnelle qu'elle le fit bientôt distinguer parmi ses confrères. Il fut cepen-

dant de ceux que le succès ne gâte point, conservant toujours une franche camaraderie qui lui valait l'affection de tous, et la vertu si rare du désintéressement absolu dans les difficultés si nombreuses de la pratique professionnelle, ce qui lui assurait la haute estime de ses confrères.

Un tel maître ne pouvait que rendre des services inappréciables à l'enseignement de l'architecture. On s'en aperçut à l'*Architectural Association*, où il professa, consacrant son temps à former et à conseiller des élèves ; sans compter qu'il contribua encore, pour une large part, à fonder plusieurs écoles en Angleterre et en Ecosse.

La haute estime qu'il avait su inspirer à ses confrères le fit appeler naturellement à la présidence du Royal Institut Britannique, de 1921 à 1923. Il fut considéré bientôt comme le "leader" du mouvement en faveur de l'unification de la profession d'architecte qu'il conduisit avec un tact, une fermeté grandement appréciés. Par sa courtoisie, ses à-propos, ses fines boutades, ses spirituelles pointes d'humeur venant au moment opportun, nul ne réussit jamais mieux à vaincre l'opposition, ne serait-ce qu'en apportant de l'ordre et de l'accord entre les idées en apparence les plus opposées, même au sein d'une assemblée houleuse et passionnée.

Nos camarades français qui l'ont connu, notamment ceux qui vinrent à Londres en 1923, à l'occasion de l'assemblée générale de notre Union Franco-Britannique, se souviennent encore de la façon tranquille, simple, mais d'une si haute forme littéraire, avec laquelle il s'exprimait dans ses discours d'un français aussi pur qu'élégant. Tandis qu'on suivait sa parole charmeuse avec un plaisir attentif, soudain jaillissaient, tout à coup, comme pour en souligner le thème, des épigrammes inattendues, des antithèses habiles, dont la délicatesse faisait encore mieux apprécier le sens. C'est que Paul Waterhouse n'était pas seulement un grand architecte mais un homme d'une vaste culture. Il mettait sa marque à tout ce qu'il écrivait comme à tout ce qu'il disait. Il avait d'ailleurs laissé à l'Université de Balliol, où il fit ses études supérieures, le souvenir d'un étudiant des plus remarqués par la hauteur de son intelligence autant que par la finesse de son esprit.

Tel aura été l'homme qui fut notre Président et dont la mort prématurée nous affecte tous profondément. Je m'honorais de son amitié. C'est avec une douloureuse émotion que je me fais l'interprète de tous les membres français de l'Union Franco-Britannique en exprimant à sa famille, à ses nombreux amis, à ses confrères anglais, toute la part que nous prenons à ce deuil cruel.

ARCHITECTS' BENEVOLENT SOCIETY.

Scheme of Insurance.

In view of the interest shown by architects in the Scheme of Insurance, the Council of the Architects' Benevolent Society have recently secured the help of an advisory committee of insurance specialists.

The Architects' Benevolent Society is now in a position to answer enquiries on every class of insurance business, whether concerning existing or contemplated policies, and is ready to give considered advice on all such questions.

THE ROYAL ACADEMY AND WATERLOO BRIDGE.

Sir Frank Dicksee, P.R.A., addressed the following letter to *The Times* on 6 March :—

"I write on behalf of the Council of the Royal Academy to express the earnest hope that Waterloo Bridge will be preserved if by any means it be possible to do so. So far as the question is one of engineering, it seems to be generally admitted that by one method or another the bridge can be saved in its present form, and the real issue appears to be whether—having regard to the facts that the bridge is too narrow, and that, if widened on the existing design, serious difficulties of navigation would arise—the expenditure of a large sum of money on the preservation of the bridge as it stands is justifiable.

"The London County Council, as the result of much anxious consideration, has decided that it is not, and that the bridge must go. We, as artists, would urge that, regarded as a work of monumental art, Waterloo Bridge is beyond price and irreplaceable, and that its unique value from this point of view not only justifies but demands its preservation. It should be borne in mind that any bridge built here to a different design must inevitably affect the architectural value of Somerset House, a relation undoubtedly realised by the designer, that makes Waterloo Bridge and Somerset House together one of the noblest architectural compositions in the world.

"The London County Council is bound to give weight to all considerations of public utility, but finance, traffic, and navigation are not the sum total of those considerations. Sometimes, and perhaps very rarely, cases arise in which there is a higher and more lasting utility that must be taken into account, and that is the spiritual impression made by noble architecture. We believe Waterloo Bridge to be such a case, and it is on this ground that we venture to urge the London County Council to reconsider its decision."

PRESERVATION OF OLD AND THE DESIGN OF NEW BRIDGES.

Circular issued by Ministry of Transport.

The Ministry of Transport has sent a circular to local authorities on the subject of the design of bridges, in the course of which it is stated :—

There are few features, whether of countryside or town, which attract more notice than the bridges carrying roads over streams and watercourses. Many of them possess historical and archæological interest. Some illustrate the fitting use of local materials by our forefathers, while others provide pleasing examples of modern methods of construction. Of recent years the rapid increase of traffic has impelled highway authorities to undertake the strengthening of many ancient bridges and the building of many additional structures, with the aid of substantial contributions from the Road Fund administered by this Department. So far as the strength of such structures is concerned, your council will be aware that for some years past certain regulations have been prescribed as a condition of a grant from the Road Fund. But it is possible for a bridge to comply with these regulations and yet fall short of the legitimate expectations of the public in the matter of architectural design and suitability to its surroundings.

Colonel Ashley accordingly wishes to impress upon all local authorities who are contemplating the alteration of ancient bridges or the erection of new ones the great importance of

securing at the outset reliable expert advice upon the design—not merely from the standpoint of the stability of the structure but also of its proportions and artistic character. Seeing how long a life may be anticipated for public monuments of this class, it will hardly be questioned that every care should be taken to build bridges and form their approaches in a manner which will display the sound judgment of the days in which we live.

With this end in view the Minister wishes it to be generally known that when receiving applications from local authorities for assistance from the Road Fund he will require to be satisfied that the foregoing considerations have been taken into account. There is no reason to assume that the observance of these principles will add to the cost of construction, for past experience shows that bridges are more frequently criticised for undue elaboration than for well-proportioned simplicity.

Preserving Ancient Structures.

In a further announcement the Ministry says :—

It is thought that considerable public interest may attach to the action taken by the Minister in drawing the attention of local authorities to the national importance of the preservation of ancient structures and of ensuring that artistic ability of high order is displayed in the building of new bridges, so that future generations may form a favourable opinion of the ability of the designers of to-day. The recent efforts of Scapa to preserve the landscapes of the country from unnecessary injury by hoardings and advertisements are evidence of the general determination of the public to safeguard the beauties of the countryside, and there are few features which play a greater part in making or marring the landscape than bridges over streams and railways. Not only is it essential that the utmost respect should be paid to the ancient structures, but that the highest skill should be invoked in the design of the new bridges which are being erected all over the country as a result of the ever-growing range and weight of motor traffic.

The Case of Clopton.

Assistance of the kind covered by these announcements has recently been given by the Ministry in the case of Clopton Bridge, at Stratford-on-Avon. In this instance it will be recalled that the proposal originally put forward by the Town Council and the County Council was to remove all the recent unsightly excrescences and then merely to widen the bridge to modern dimensions. As part of this operation it was proposed to re-use the stone facings stripped from the old bridge to form the new facings of the extended bridge, a proposal to which grave exception was taken by archæological and architectural authorities on the ground that it was falsifying the whole structure. It was held, moreover, that the inclusion of the old portion of Clopton Bridge in the new structure would have the effect of exposing the ancient stonework to the shock and stress of modern traffic, which it was probably incapable of supporting for any length of time.

Various suggestions were made and warmly debated, but ultimately the Ministry of Transport, recognising that no alternative site for a bridge was available, save at prohibitive cost, put forward a proposal which secured general acceptance at a conference of the authorities interested in the bridge. It involves the removal of the unsightly iron footway and the reconstitution of the bridge in its original narrow form with a parapet on each side, the intention being to reserve the old bridge exclusively for foot traffic, so that there shall be no risk of damage by vehicular transport. By the side of this structure there would then be erected a general traffic bridge consisting of a carriageway and another footway. This work would be carried out in the lightest form of twentieth century reinforced concrete, so designed as to obscure as little as possible the features of the ancient Clopton Bridge. It is anticipated that the piers of the new structure would be opposite every second or third pier of the old bridge so as to mask the ancient masonry to the least possible extent. One of the advantages of the use of reinforced concrete is that owing to the comparatively small scale of the structural members there is the minimum of obstruction to view.

The details of this revised scheme for Clopton Bridge are now being considered by the local authorities concerned. If it is adopted visitors to Stratford-on-Avon will be able to walk the whole length of the bridge restored as nearly as possible to the form in which it was left by its original builder, Sir Hugh Clopton, in Shakespeare's day. Its identity will not be destroyed, and the reinforced concrete structure will proclaim itself to future ages as a typical product of our times, just as each generation in turn has made additions in its own style to the ancient cathedrals of our country.

*** The following letter has been received from Colonel Ashley, Minister of Transport, in response to the Resolution passed at the General Meeting (see Minutes, page 328).

Ministry of Transport,
6 *Whitehall Gardens, S.W.*1.
18 *March* 1925.

To the Secretary, R.I.B.A.,—

Dear Sir,—I am much obliged for your letter of the 17th of this month, and am very gratified to learn that my action on the subject of the design of bridges has been appreciated by the members of The Royal Institute of British Architects.—Yours faithfully,

(Signed) Wilfrid Ashley.

Allied Societies

SOUTH WALES INSTITUTE OF ARCHITECTS.

Annual Dinner.

There was a large and representative gathering at the annual dinner of the South Wales Institute of Architects, held on 12 March at Cardiff.

Mr. Percy Thomas, O.B.E. [*F.*] (President), presided, and the principal guests were : Mr. J. Alfred Gotch, M.A., F.S.A., P.R.I.B.A., the Lord Mayor of Cardiff (Alderman W. H. Pethybridge), Mr. Arthur Hope [*F.*] (President, Manchester Society of Architects), Mr. Ian MacAlister, M.A. (Secretary R.I.B.A.), Mr. E. P. Warren [*F.*] (President, Berks, Bucks, and Oxon. Architectural Association), Mr. James Turner, J.P., Mr. E. P. Davies (President, South Wales Building Trades Employers' Federation), Mr. F. Jenkins (President, South Wales Institute of Builders), Mr. Lleufer Thomas (Stipendiary Magistrate for Pontypridd), Mr. T. E. Gough (President, Cardiff Master Builders' Federation), Mr. T. Peirson Frank, M.Inst.C.E., F.S.I. (City Engineer, Cardiff), Principal George R. Bennett, M.B.E., B.Sc. (Technical College, Newport), Mr. Isaac Watkins (Secretary, South Wales Building Trades Employers' Federation), Mr. H. Horace Sweet-Escott, Mr. Ernest Cross, Mr. J. Ll. Morgan, and Mr. Edgar Morgan (Rhondda Urban District Council).

"The Royal Institute of British Architects and the Allied Societies" was proposed by the President, who coupled with the toast the names of Mr. J. Alfred Gotch, Mr. Arthur J. Hope, and Mr. E. P. Warren. Speaking of the growth of the Institute, Mr. Thomas said there never was a time when its influence and prestige was greater than it is to-day, for not only did it now represent the whole of the practising architects in this country, but

it also represented—and in this respect it was unique—the profession throughout the British Empire.

Mr. Thomas referred to two resolutions passed recently by the Institute, one of which was addressed to local authorities requesting that when new public buildings were being designed they should be the subject of competition, or at any rate that they should be designed by a qualified architect. The other resolution had reference to the acceptance by the Institute members of a reduced scale of charges for housing contracts. It was not only desirable, but it was essential, said Mr. Thomas, that all buildings should be architecturally worthy of their locality. He thought they would agree that Cardiff was an outstanding example of the good results obtained by making the designs for the municipal buildings the subject of competition.

With regard to housing, it was regretted by many architects that their services were employed so little on this great work. The desire to-day seemed to be to put up any sort of erections, and it did not matter whether they were steel, concrete, wood, or asbestos so long as they were houses. There was a great danger in this policy, as it might lead to the creation of more slums.

Responding, Mr. J. Alfred Gotch stated that there was not a president of the kindred societies of the Royal Institute who carried more weight in discussions than Mr. Thomas. The work of the R.I.B.A. was becoming more and more influential, as was evidenced by the fact that frequent calls were being made on it, both by Government and public bodies.

Mr. Arthur J. Hope also responded and stated that the civic authority of Cardiff were deserving of the highest congratulation for the beauty of their municipal buildings. He would like, as an architect speaking to brother architects, to add his tribute to what had been accomplished in Cardiff. Continuing, he said architects in this country had great opportunities. To-day architecture was vital in the public interest, and they (the architects), who were doing their best to advance this interest, were serving their fellow-men in the very highest degree.

" Our Guests " was proposed by Mr. C. F. Ward.

The Lord Mayor, in responding, said that he thought it would be a great advantage if more architects served on public bodies. They had in Mr. T. Peirson Frank, the city engineer, one of the best servants a corporation could have, but it would be a great advantage if more architects served on the committees of the Cardiff Corporation. Referring to the recent press criticism of Cardiff, the Lord Mayor said that if the gentleman who wrote the article in a Sunday newspaper would pay him a visit he would be pleased to show him some of the beauties of " Modern Athens." Touching on the question of the provision of a public hall, he stated that when the scheme reached fruition they could depend upon it, it would enhance and not detract from the other beauties of the city.

Mr. J. E. Turner also replied and stated that he hoped that architects and builders would do their utmost to re-establish the now defunct Joint Industrial Council which was set up in 1916 for the purpose of establishing a better understanding between employers and employees. He felt it was in the interest of the country that the council should be restored.

The Chairman proposed the health of Mr. Ian MacAlister, the Secretary of the Royal Institute, and paid a high tribute to his energy and ability, whilst " Our President " was submitted by Mr. Alwyn Lloyd.

During an interval Mr. Percy Thomas made a presentation to Mr. H. Teather to mark the services he had rendered the South Wales Institute of Architects since 1907, and also as a mark of the esteem and regard in which he is held by his fellow members.

Mr. Teather suitably acknowledged the gift.

LIVERPOOL ARCHITECTURAL SOCIETY.

Annual Dinner.

The annual dinner of Liverpool Architectural Society was held on 13 March, the President of the Society (Mr. E. Bertram Kirby) occupying the chair.

The President of the R.I.B.A. (Mr. J. Alfred Gotch), in proposing " Liverpool Architectural Society," said that was the oldest of all the societies allied to the Royal Institute, and with the others exerted a powerful and beneficent influence upon the parent body.

Mr. E. Bertram Kirby referred to Liverpool Cathedral as representing the most momentous achievement in art of any description which this country had produced for at least two centuries. There were very few people who did not think they could do the smaller practical things as well as a man who had devoted his life to them, but in the matter of the Cathedral they went to the other extreme, regarding it as something so wonderful, beautiful, and mysterious that no ordinary person could be expected to understand it. Both extremes were equally lamentable. The justification of any architectural work, however great or small, was that it stood the test of public use, and the final arbiter of the question was their old friend the man in the street, not necessarily of to-day but during three generations, at the end of which time the ephemeral things were dissipated and opinion had crystallised. People in this country emulated each other in their patronage of musicians, painters, and writers, but he had yet to hear that the same had occurred in the case of architects, although they were the humble practitioners of the mother of the arts.

Professor C. H. Reilly, toasting " Our City," said that no man now built for himself alone. The exteriors belonged to the town, and it was for the town and its representatives to value and control them. On paper Liverpool had gone further in this direction than any other city. It had a larger corporate estate, and it now had its special Act of Parliament controlling the exterior appearance of every building. Could we honestly say that the town had yet realised its advantages in this respect? When he first came to Liverpool twenty years ago the Corporation, on the estate it had recently bought from the Dock Board at the Pier-head, was in a position to control the shape and size of their great buildings there. We were painfully aware now of the irregular outline of those three buildings.

In those days we thought imperially; we had not yet, perhaps, learnt the more difficult task of thinking in terms of the dignity of our own city. Had we improved? Let them not think for a moment, however, that Liverpool was the only city that erred consciously

or unconsciously in these ways, but, like London and Birmingham, this city should have its Fine Arts Commission to enable it to take longer and larger views.

The Lord Mayor, responding, said the Corporation of Liverpool was considering the formation of an architectural department, so that all their buildings would "have a kind of architecture attached to them."

NOTES FROM THE MINUTES OF THE COUNCIL MEETING,

2 March 1925.

Architects' and Builders' Joint Board.

As a result of informal negotiations with representatives of the National Federation of Building Trades Employers, proposals have been formulated for the establishment of an Architects' and Builders' Joint Board. These proposals have been approved by the Council of the R.I.B.A., and the first meeting of the Board will take place on 11 March.

The Bristol School of Architecture.

A grant of £50 for the year 1925 was made in aid of the funds of the Bristol School of Architecture.

Prize Students.

The proposed tours of the following prize students were approved :—

The Owen Jones Student, 1925.
The Pugin Student, 1925.
The Godwin Bursar, 1925.
The Alfred Bossom Travelling Student, 1925.

The R.I.B.A. Diploma in Town Planning.

It was decided that a modified examination be arranged to meet the case of approved candidates from the Dominions until it is possible to make arrangements to hold the usual examination overseas.

The British Non-Ferrous Metals Research Association.

The usual annual grant of £15 was made in aid of the funds of the Association.

The Intermediate Examination.

Mr. Donald Cameron was appointed as an additional Examiner for subject B. (Calculations of Simple Structures.)

Fellowship Examiners.

The following members of the Council have been appointed to conduct the Fellowship Examination for Licentiates :—

Mr. Walter Cave.
Mr. H. S. Goodhart-Rendel.
Mr. J. Alan Slater.

The Ancient Monuments Board (England).

Sir Reginald Blomfield, R.A., has been nominated as the representative of the R.I.B.A. on the Board for a further period of five years from 31 March.

Reinstatement.

Mr. Arthur Wakerley was reinstated as a Fellow.

Resignation.

The Council accepted with regret the resignation of Mr. A. A. Messer, L.R.I.B.A.

ST. PAUL'S CATHEDRAL.

A meeting of the St. Paul's Representative Committee was held at the Deanery on 13 March. There were present the Archbishop of Canterbury, the Dean, Canon Newbolt, Canon Alexander and Canon Simpson, the Archdeacon of London, the Lord Mayor, Mr. Philip Snowden, Mr. E. C. Trench, Sir John Mullens, Sir Charles Morgan, Sir Lewis Dibdin, Captain Peach, and Mr. H. T. A. Dashwood (secretary).

The following resolution was adopted on the motion of the Archbishop of Canterbury, seconded by the Dean :—

"The committee desires to express its sense of the very high service which has been rendered to the public by the eminent architects and engineers who have for nearly three years given time and pains gratuitously to the investigations and works carried on in the Cathedral."

The architects and engineers to whom the resolution refers are Sir Aston Webb, Mr. Basil Mott, Mr. G. W. Humphreys, Mr. E. C. Trench, and Mr. Mervyn Macartney.

Lord Ullswater has accepted the invitation of the committee to become a co-opted member.

THE ARCHITECTS' AND BUILDERS' CONSULTATION BOARD.

On 2 March 1925 the Council of the R.I.B.A. approved the establishment of an "Architects' and Builders' Consultation Board," consisting of four Architects appointed by the Council of the R.I.B.A. and four Builders appointed by the National Federation of Building Trades Employers.

This Board is advisory only and has been set up to consider and report upon matters affecting the Building Industry generally, with power to consult the organisations representing the interests of Employers, Operatives, Surveyors and Architects, and to examine and discuss matters which tend to create friction between these organisations. Questions such as impending changes of policy, procedure or methods current in the industry, allegations of encroachment by any Organisation or its members upon the functions of another Organisation or its members, technical matters in connection with the Industry and Government proposals for legislation which may affect the Industry, will also be within the scope of the Board.

The Members of the Board are Major Harry Barnes, Messrs. Henry V. Ashley, Arthur Keen and Herbert A. Welch, Architect Members ; Messrs. W. H. Nicholls, H. T. Holloway, Henry Matthews and Sir Walter Lawrence, Builder Members. Major Barnes has been appointed Chairman for one year. The meetings of the Board are attended by the Secretaries of the two constituent bodies.

EXHIBITION OF STUDENTS' DRAWINGS.

R.I.B.A. Final Examination : Testimonies of Study.

A selection of approved Testimonies of Study submitted by applicants for admission to the R.I.B.A. Final Examination will be on exhibition in the R.I.B.A. Galleries from Monday, 23 March, to Saturday, 28 March, inclusive, between the hours of 10 a.m. and 5 p.m. (Saturdays, 10 a.m. to 1 p.m.).

The attention of students is specially drawn to this exhibition.

THE NEW CHARTER AND BYE-LAWS.

Fellows and Associates of the R.I.B.A. are reminded that under the provisions of the new Charter they are permitted to use the title " Chartered Architect " in addition to the use of the appropriate initials of their class.

Licentiates are reminded that they are now full corporate members of the Royal Institute and that they are permitted to use the title " Chartered Architect " in addition to the initials " L.R.I.B.A."

Notices

THE ELEVENTH GENERAL MEETING.

The Eleventh General Meeting (Ordinary) of the Session 1924–25 will be held on Monday, 30 March 1925, at 8 p.m., for the following purposes :—

To read the Minutes of the General Meeting (Ordinary) held on 16 March 1925 ; formally to admit members attending for the first time since their election or transfer.

To read the following paper, " The Architectural Treatment of Ferro-Concrete," by Mr. A. Beresford Pite, Hon. M.A.Cantab. [*F.*].

ARCHITECTURE AND THE CRAFTS.

The first of the series of popular lectures on the Crafts associated with Architecture will take place on Wednesday, 25 March 1925, at the R.I.B.A. at 5 p.m., when Mr. Walter H. Godfrey will deliver a lecture on " Heraldry and Architecture."

The following lectures have also been arranged :—

Friday, 3 April, at 5 p.m., " Coloured Carving in Wood and Stone," by Mr. Laurence Turner.

Tuesday, 21 April, at 5 p.m., " Metal Work," by Mr. R. L. Rathbone.

Thursday, 30 April, at 5 p.m., " Mural Painting," by Mr. John D. Batten.

The lectures are open free to the general public, and in certain cases will be associated with exhibitions of examples of the crafts which form the subjects of the lectures.

VISIT TO BRITANNIC HOUSE.

The visit to Britannic House, Finsbury Circus (Sir Edwin L. Lutyens, R.A., Architect), originally fixed for Saturday, 18 April, will take place on Saturday, 4 April 1925, at 2.45 p.m.

Members desiring to take part in this visit should communicate with the Secretary R.I.B.A., 9 Conduit Street, W.1, as soon as possible.

The visit to Adelaide House (Sir John J. Burnet, R.A., R.S.A., Hon. LL.D., Architect) will take place on Saturday, 18 April, as previously arranged.

R.I.B.A. ANNUAL DINNER 1925.

The Annual Dinner of the Royal Institute of British Architects will take place on Tuesday, 12 May. Full particulars are issued with this copy of the *Journal*.

THE 58TH ANNUAL CONVENTION OF THE AMERICAN INSTITUTE OF ARCHITECTS.

20TH TO 24TH APRIL 1925.

The attention of Members is called to the cordial invitation received from the President of the American Institute of Architects to British architects to attend the above Convention to be held in New York (see R.I.B.A. JOURNAL, page 194, 24 January 1925).

It is hoped that a substantial number of British architects will be able to take advantage of this most welcome invitation and that they will send their names as soon as possible to the Secretary, R.I.B.A., 9, Conduit Street, London, W.1, from whom particulars can be obtained as to steamship sailings, passage rates, hotel accommodation, passports, etc.

Competitions

PROPOSED REBUILDING OF THE ENGLISH BAPTIST CHURCH, PONTLOTTYN.

The Competitions Committee desire to call the attention of members to the fact that the conditions of the above competition are not in accordance with the regulations of the R.I.B.A. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime Members are advised to take no part in the competition.

PROPOSED EXTENSION TO THE SHIREHOUSE, NORWICH.

Closing date for receiving designs 1 July 1925. Assessor, Mr. Godfrey Pinkerton, F.R.I.B.A. Last day for questions, 1 April 1925. Premiums £150, £100, and £50. Apply to the Clerk of the County Council, Shire Hall, Norwich.

NATIONAL COMMEMORATIVE WAR MONUMENT.

To be erected on Connaught Place, Ottawa, Canada. Closing date for receiving designs, 11 June 1925. Assessors Henry Sproatt, LL.D., R.C.A., Herman A. MacNeil, N.A., F. J. Shepherd, M.D., C.M., LL.D. Total cost not to exceed $100,000. Apply to the Secretary, Department of Public Works, Ottawa, Canada.

PROPOSED PRESBYTERIAN CHURCH AT CHEAM, SURREY.

The Competitions Committee desire to call the attention of Members to the fact that the Conditions of the above Competition are not in accordance with the Regulations of the R.I.B.A. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime Members are advised to take no part in the Competition.

STOCKSBRIDGE PUBLIC SWIMMING BATHS COMPETITION.

Members of the Royal Institute of British Architects must not take part in the above competition because the conditions are not in accordance with the published regulations of the Royal Institute for Architectural Competitions.

COALVILLE PUBLIC BATHS COMPETITION.

The President of the Royal Institute of British Architects has nominated Mr. Alfred W. S. Cross, F.R.I.B.A., as assessor in this competition.

COMPETITIONS (continued)

COMPETITION FOR A HIGH BRIDGE OVER COPENHAGEN HARBOUR.

Copenhagen Municipality hereby invite participation in an International Competition in connection with a High Bridge over Copenhagen Harbour.

The Municipality have set apart a sum of 35,000 kroner to be expended in prizes. There will be three prizes, the value of which will be fixed by a Judgment Committee consisting of Members of the Council, together with technicians chosen by the Municipality, the (Danish) Institute of Civil Engineers and the (Danish) Society of Architects. The largest prize will be at least 15,000 kroner.

Programme and particulars in Danish and English can be procured after 1 February 1925, from the City Engineer's Office, Town Hall, Copenhagen B, against a deposit of kr. 100.

The deposit is repayable after the judging, or previously if the drawings, particulars, etc., are returned in good condition. Projects to be delivered to the City Engineers Directorate, Town Hall, before mid-day, 1 September 1925.

After judgment the competing projects will be publicly exhibited at the Town Hall, Copenhagen.

LEAGUE OF NATIONS.

Competition for the Selection of a Plan with a View to the Construction of a Conference Hall for the League of Nations at Geneva.

The League of Nations will shortly hold a competition for the selection of a plan with a view to the construction of a Conference Hall at Geneva. The competition will be open to architects who are nationals of States Members of the League of Nations.

An International Jury consisting of well-known architects will examine the plans submitted and decide their order of merit.

A sum of 100,000 Swiss francs will be placed at the disposal of the Jury to be divided among the architects submitting the best plans.

A programme of the competition will be ready in February, 1925, and will be despatched from Geneva so that Governments and competitors may receive copies at approximately the same date. Copies for distant countries will therefore be despatched first.

The British Government will receive a certain number of free copies. These will be deposited at the Royal Institute of British Architects, and application should be made to the Secretary, R.I.B.A., 9, Conduit Street, W.1, by intending competitors.

Single copies can be procured direct from The Secretary-General of the League of Nations at Geneva, for the sum of 20 Swiss francs, payable in advance, but will not be forwarded until after the Government copies have been despatched.

On the nomination of the President of the Royal Institute, Sir John Burnet, A.R.A., has been appointed as the British representative on the Jury of assessors.

TECHNICAL COLLEGE, MIDDLESBROUGH.

The conditions of the above Competition have been submitted to the Competitions Committee of the R.I.B.A., and are found to be in accordance with the Regulations of the R.I.B.A.

THE NEW INSTITUTE FOR THE BLIND, BUENOS AIRES, ARGENTINE REPUBLIC.

An International Competition has been promoted for the Argentine Institution for the Blind, Buenos Aires, Argentine Republic.

A small number of copies of the Conditions have been deposited in the R.I.B.A. Library for the information of British Architects who may desire to compete.

MASONIC MEMORIAL COMPETITION.

Closing date for receiving designs, 1 May 1925. Assessors: Sir Edwin Lutyens, R.A. [*F.*] (appointed by the President); Mr. Walter Cave [*F.*], Mr. A. Burnett Brown, F.S.I.

BETHUNE MEMORIAL TO THE MISSING.

The Imperial War Graves Commission desire Members and Licentiates of the Royal Institute to be reminded that applications to take part in the above Competition from persons other than those who had signified their intention of competing on or before 1 January 1924 cannot be considered. Due notice of this regulation was published in the Professional Press on various occasions during August and September, 1923.

ROYAL SOCIETY OF ARTS.

Memorial Library for a College Competition.

In order to encourage the study of designs for industrial purposes the second series of open competitions organised by the Royal Society of Arts will include a competition for a Memorial Library for a College suitable for housing a small but rare collection of books.

The conditions are as follows:

A Travelling Scholarship of the value of £150 for one year will be offered on the following conditions:

Candidates must not be over 35 years of age. They must be prepared to travel in France, Italy, Spain or Flanders for six months, which, however, may be broken up into periods of, say, three or two consecutive months.

Subject of Competition.

The subject is a Memorial Library for a College, suitable for housing a small but rare collection of books.

The superficial area of the room is not to exceed 1,500 feet. The method of arranging the bookcases and displaying a few *objets d'art* is left to the competitor. Cost is not a primary consideration, and the use of expensive woods, as well as inlays of ivory, ebony or metal, in addition to marble, can be considered.

In a suitable place a commemorative panel or some other *motif* should remind the visitor of the origin of the Library. The scheme of the ceiling, which can be treated as a space for decorative painting, as well as the pattern of the floor, must harmonise with the whole design.

A preliminary competition of twelve hours will be held in London and other centres in April 1925. Candidates must give notice of their intention to compete to the Secretary of the Royal Society of Arts, not later than 14 March. For this competition the following drawings will be necessary:

A plan of the floor, one section, and a plan of the ceiling, all to the scale of a quarter of an inch to a foot.

For the final competition two months will be allowed to the competitors, selected after the first competition. The finished drawings are to include the following:

Plans of floor and ceiling and two sections to a scale of half an inch to a foot, a detail drawing of the fireplace or some other feature, showing the complete height and treatment of the room from floor to ceiling.

Competitors should bear in mind that electric lighting and central heating are to be considered.

The competition will take place in June 1925.

Members' Column

OFFICES TO LET.

OFFICE to let in New Burlington Street. Three or four rooms suitable for architect. Rent £200 per annum inclusive.—Apply Box No. 1925, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

APPOINTMENTS WANTED.

ARCHITECTURAL engineer of very large experience desires work, temporary or permanent, anywhere. Special qualifications in geology, mining, drainage, underpinning and shoring, ventilation and heating, foundations and dilapidations, building and land surveying, also levelling. Highest references. Willing to take charge of job.—Apply Box 8322, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

CLERK OF WORKS with many years English and American experience, desires appointment in town or country on any kind of work. Highest references; salary by arrangement.—Reply Box 3822, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

LICENTIATE of long experience in London available for temporary work. Working drawings of small houses, factories, banks, etc. Expert in steel construction. Qualified for district surveying. —Address Box 4211, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

ARCHITECT'S WIDOW, thoroughly experienced cooking, economical housekeeper, desires post (with boy of 2) where maid kept; salary; excellent references. Not London.—Reply Box 1655, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

YOUNG F.R.I.B.A., varied experience in town and country work, requires position at home or abroad. Planning, details, specifications and quantities. Can take charge. References and fullest particulars offered.—Apply, in the first instance, to the Secretary R.I.B.A., 9 Conduit Street, W.1.

A.R.I.B.A., 40, desires engagement in or near London, 20 years with well-known provincial firms, lately as chief assistant. General architectural experience, Gothic specialist. Salary £450, or profit-sharing arrangement.—Apply Box 7325, c/o Secretary, R.I.B.A., 9, Conduit Street, London, W.1.

ASSISTANT WANTED.

EXPERT Assistant accustomed to making good working drawings wanted. Good salary to a good man.—Apply Box 4354, c/o Secretary, R.I.B.A., 9 Conduit Street, W.1.

ACCOMMODATION OFFERED.

ARCHITECT'S WIDOW offers good accommodation, bed and breakfast, near Russell Square; central for all parts of London. Bathroom. Electric light. Well recommended and terms moderate. —Reply Box 1425, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

PARTNERSHIPS WANTED.

A.R.I.B.A. (31), good all round experience, wishes to enter into partnership with well-established firm of architects and surveyors. Capital available. Lancashire, Cheshire or North Wales preferred. —Box 3131, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

A.R.I.B.A., B.Arch. Liverpool, age 31, desires partnership with established architect who requires a junior, or post in office with a view to partnership. Good qualifications and references.—Apply Box No. 9225, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.1.

A.R.I.B.A. seeks partnership in old-established London firm. Willing to invest capital and amalgamate own practice.—Reply Box 3112, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

F.R.I.B.A. (38) wishes to enter into partnership with well established architect or firm of architects (central London). Willing to amalgamate own practice. Capital available.—Box 3118, c/o Secretary, R.I.B.A., 9, Conduit Street, W.1.

A.R.I.B.A. (27), 3 years A.A. Schools, all round experience with a leading London architect, seeks a junior partnership in old established firm, or a position in office with a view to partnership. Capital and good references available. Any district.—Reply Box 1735, c/o Secretary, R.I.B.A., 9, Conduit Street, W.1.

P.A.S.I. Age 36. Would like to meet a young architect with a view to partnership. Fully qualified in all branches of surveying. —Apply Box 9325, c/o Secretary, R.I.B.A., 9, Conduit Street, W.1.

DISSOLUTION OF PARTNERSHIP.

The Partnership existing between MR. B. S. JACOBS and MR. T. SNOWDEN, Architects and Surveyors, County Buildings, Hull, has been dissolved by mutual consent as from the 24th day of February, 1925. All debts due to and owing by the late firm will be received and paid respectively by Thomas Snowden, who will continue to carry on the business under the style or firm of B. S. Jacobs and T. Snowden.

RESIDENTIAL.

A.R.I.B.A., P.A.S.I., having unsuccessfully sought for a reasonably priced residence, would be glad to hear from a Brother Architect in similar position, with a view to mutual purchase and conversion of a family residence for personal occupation and co-operation.—Reply Box 8325, c/o Secretary, R.I.B.A., 9 Conduit Street, W.1.

Minutes X

SESSION 1924–1925.

At the Tenth General Meeting (Ordinary) of the Session 1924–1925, held on Monday, 16 March, 1925, at 8 p.m.

PRESENT:—Mr. J. Alfred Gotch, President, and afterwards Mr. Walter Cave in the Chair.

The attendance book was signed by 21 Fellows (including 6 Members of the Council), 28 Associates (including 1 Member of the Council), 6 Licentiates, and a large number of visitors.

The Minutes of the Meeting held on 2 March, 1925, having been taken as read, were confirmed and signed by the President.

The Hon. Secretary announced the decease of Mr. Frederick Pinches [*A.*], and it was

RESOLVED, that the regrets of the Royal Institute for his loss be entered on the Minutes and that a message of sympathy and condolence be conveyed to his relatives.

The President announced the admission of 180 Fellows, 608 Licentiates, 193 Students, 67 Probationers, and 4 Hon. Associates from the ranks of the Society of Architects, expressed the satisfaction of the members of the Royal Institute at the happy completion of the work of amalgamation, and extended a hearty welcome to the new members.

The following members, attending for the first time since their transfer, were formally admitted by the President:—

Messrs. George Coles, P. E. Culverhouse, Arthur Gilbert, Albert E. Kingwell, W. H. Robinson and C. S. Thomas, Fellows; Messrs. W. W. Diggle, Norman G. Harland, and J. S. Kay, Licentiates.

The President having called attention to the report in *The Times* of the action taken by the Ministry of Transport in regard to the preservation of old bridges and the design of new ones,* stated that this pronouncement, which had been sent to local authorities throughout the country, perfectly expressed the views held by the Royal Institute on the subject, and on his motion it was

RESOLVED, that a message of thanks be sent from this meeting to Colonel Ashley, Minister of Transport, for the step which he has taken in sending the circular to local authorities.

Mr. F. R. Hiorns [*F.*] having read a paper on "The Corporate Spirit in Architecture" and illustrated it by lantern slides, a discussion ensued, and on the motion of Professor W. R. Lethaby, seconded by Mr. Gilbert Bayes, Master of the Art Workers' Guild, a vote of thanks was passed to Mr. Hiorns by acclamation and was briefly responded to.

The Meeting closed at 10.15 p.m.

It is desired to point out that the opinions of writers of articles and letters which appear in the R.I.B.A. JOURNAL must be taken as the individual opinions of their authors and not as representative expression of the Institute.

R.I.B.A. JOURNAL.

Dates of Publication.—1924: 8th, 22nd November; 6th, 20th December. 1925: 10th, 24th January; 7th, 21st February; 7th, 21st March; 4th, 25th April; 9th, 23rd May; 13th, 27th June; 18th July; 15th August; 19th September; 17th October.

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* See page 322.

THE STADIUM, WEMBLEY

The Architecture of Concrete

BY PROFESSOR BERESFORD PITE, HON. M.A. CANTAB. [*F.*].

[*Read before the Royal Institute of British Architects on Monday, 30 March 1925*]

FERRO-CONCRETE is claiming an increased share in the production of buildings; of this we are duly informed by the regular and plentiful supply of illustrations by the promoters of various systems of construction.

We would acknowledge the interest and usefulness of this propaganda, but venture to doubt if their publishers are aware of the mixed emotions that the architecture illustrated evokes in our bosoms.

The factories, public buildings and bridges which at present form the bulk of the work executed in ferro-concrete can scarcely provide sufficient justification for a general discussion of the architecture of concrete, but they illustrate at least some of its practical applications at home. On the Continent, however, it is evident that a courageous architectural spirit has seized upon the possibilities, artistic as well as practical, of this novel substance and construction, and that results which can only be described as revolutionary have already appeared.

Further, the formation of classes for the study of ferro-concrete have sprung up in our Technical Institutes to meet the constant demand for expert knowledge, and the feeling is general in the structural engineering world that a Cement Age has dawned upon civilisation.

The late Lord Grimthorpe coined the ungraceful word " sticktion " to describe the service of mortar to brickwork; it is an obviously permissible use, and it is useful to us in considering one of the essential qualities of ferro-concrete, as it also thus defines a fundamental difference in the elemental principles both of design and design between walls and arches built up of blocks in courses and those made of concrete.

The consideration of the effect of this primary distinction in method is one of the motives of this

paper ; the idea of internal adhesion belonging to the material and producing homogeneity without anxious care must be novel, and of the nature of a relief to the constructor. Its attainment has always been his ideal, but the repugnance to the employment of concealed tie-rods is always manifested by the consistent tendency to rely either on trabeated or arcuated lines.

The new idea, as our French brethren have perceived, is revolutionary rather than evolutionary. It raises manifold questionings as to due architectural expression, and necessarily also it involves reconsideration of methods in the study of the practice of design,with the courses of training leading to its fulfilment. It would appear to be consequential, if we had not the experience of antiquity to the contrary, that a fundamental and new difference of constructive method must deflect the architectural expression of construction from the traditional motives of old methods.

Such expression is at least one of the primary causes of any architecture, though its caricature as decoration may survive and invade other materials and methods. To-day we are in the presence of a new process that is rapidly becoming general and therefore little apology is required for an attempt to discuss its manifestation in architecture and its effect upon our ideals.

The subject will be sketched under three heads :

1. The difference in constructive method and its expression in design.
2. The resulting architectural forms and the possibility and service of ornament.
3. The problem of education for the design of concrete architecture.

1. Differences in Constructional Method and Expression.

We do not propose to deal with the use of concrete as an imitation of stone in blocks, slabs or cast columns or arches.

Apart from the speculation whether such a use is justifiable, its results architecturally would be merely those hitherto common to all buildings ; in such the multitude of stones or bricks, piled up course by course, have each a relation to its neighbours that becomes the constant care of the designer.

This subject of concrete substitutes has no urgency to-day, and may be left to the tender care for economics that distinguishes the housing problem.

The architecture of concrete is that of a material dealt with in a fluid state, poured into and allowed to harden in moulds, which in the process are a temporary part of the fabric. The forms into which it ultimately hardens are created when it is plastic, possessing a freedom new to building processes, unknown to stonework and beyond the scale and scope of any moulded brick or terra-cotta. Its possibilities of entirely novel form are therefore many, and really terrify the tradition-loving imagination of the architect.

Combined with this initial plasticity and consistently secreted within, lie the reinforcements of steel rods, gathering up the tensile and shearing strains that rend the built-up wall of masonry or brickwork, thus dispensing with thickening piers and buttresses. Walls, even when not mere panels between piers, have a thinness that is unusual and which baffles the ordinary architectural conception of a wall, like boiler plate building.

The reinforcement does not dispense with articulation ; though it is not bare, as it may be in steel framework, it exists clothed with the concrete of the composite material.

It is not the least useful of the qualities of the combination of steel and concrete that an essential unity of structure results from the mixture of minerals and metal. The advent of concealed steel framing into walls used to be justified by the analogy of the human skeleton, and answered by the purists with the retort that the flesh had no structural relation to its bones. But the simile will now hold good and perhaps be carried further into the analogy of muscle and tendon which yield the beauty of form to the animal figure.

Ultimately, of course, the static result of the building is identical with that of the older forms of construction, though the architectural expression which depends so largely upon tradition is very different. The column and lintel of ferro-concrete still exercise the functions of those of the Doric Order, but with greatly extended range. Imagination and sympathy with Greek thought should not be alarmed by the suggestion that the Parthenon, if constructed of ferro-concrete, would only need one supporting column at each angle of the peristyle, and that the subtleties of intercolumniation may be dispensed with. The cantilever can now be constructed and employed with a certainty that opens fresh possibilities of adventure beyond those so laboriously and wonderfully developed in Indian

Dravidic architecture. As in bridge construction, it replaces the arch and dispenses with buttresses. Again the emotions may be perplexed by a dream of the vaults of Rheims, Amiens or Beauvais carried aloft without the external scaffolding of flying buttresses, as graceful and necessary to our minds as the peristyles of Greece, but it is evidently not only possible but as proper to employ the resources of ferro-concrete for imaginative architecture as masonry. The arch in ferro-concrete alters its nature; to the Greeks it was probably but a subterfuge, to the Romans a constructional wonder known only in its semicircular form with its regular elliptical intersections; developed in mass concrete with brick reinforcements with an energy and success that may be considered as one of the most potent illustrations of an empire's character supplied by architectural history. But what would not the builders of the Pantheon and of the vaults of Maxentius and Caracalla have achieved if ferro-concrete had relieved them from the enormous burden of abutment! The Roman genius that had established a new architectural beauty in sheer constructional effect, with proportions of strength and dignity undreamt of by the Greeks, may well be credited with revelations of the possibilities of ferro-concrete construction exceeding anything that even now has been attempted, either in the old world or in the new.

To the mediæval builders the arch became in its indispensable and marvel-working pointed form the fairy godmother of architecture. The whole development of vaulting is the constructional and artistic use of the pointed arch and the graces of tracery illustrate its virtues. But now as a constructional expedient or necessity the days of the arch are numbered, and it is doomed to the fate of its superfluous abutments. A pair of parabolic cantilevers may yield the aspect of the arch, and ere long produce new combinations, but as the fecund source of architectural effect the vault has, except in name, been superseded. With the disappearance of buttresses and walls of massive thickness how many cherished motives fade away! In ferro-concrete, as all dimensions are settled by formulæ and mathematics, the empiric methods of masons and picturesque excesses of material are replaced by exactness of measure. Gwilt's deductions from the measurement of many buildings of the necessary thickness of walls are now as useless as the legal requirements of old Building Acts, and Fergusson's comparative tables of the relation of the total area of the piers to the whole plan of a cathedral become apochryphal. As the Eiffel Tower has replaced the Ziggurat of Babylon and already reconciled the second generation of Parisians to its proportions and grace, so we are also tardily conscious that the Forth Bridge is a work of art, though we cannot yet believe that a Thames bridge characteristic of the new age could be beautiful.

The effect of the difference in constructional method of ferro-concrete upon architectural expression appears to be cruelly destructive of the materials upon which architectural imagination and invention operate by destroying the *raison d'être* of the most characteristic features and their proportional relation. The new conception of substance as fluid when handled, slowly coagulating around muscular rods, reduces to absurdity the construction of obelisks or carved pinnacles. The evolutionary processes of building up and craftsmanship which underlie the interest of most architectural features having been replaced; all relation to a historic past ceases and historic forms originating in historic workmanship of solid materials become the materia of the anthropologist rather than of the architect.

Together with the structural revolution of architectural idea involved in the new method is the entire alteration of surface or texture, which plays such a subtle and valuable part in the harmony of artistic effect. Without the conception of masonry, with its interesting surface and intelligent jointing, a pyramid, a temple or a cathedral becomes a lifeless mass; one of the most considerable elements both of natural and human interest in the walls would be absent and the monuments of past art might seem only to have the interest of full size models of forms incapable of material analysis.

But we shall have to conceive a concrete architecture without joints, or their adventitious imitation as in the stucco palaces of West London, and we must honestly brace ourselves for the effort. Imitation of technique can only be occasionally justified as a decorative expedient when deception is impossible—as in the painted masonry of Gothic decoration or the rustications of Renaissance precious metal-work. In cement concrete it is a confession of weakness by the architect so that its mere absurdity cannot dignify it even if designed with humorous intent. The plea for the quality of

scale afforded by the subdivisions of jointing must be satisfied by other less invidious means than by imputing to a liquid the properties of a solid. The affectation of age and antiquity, such a besetting sin with architects to-day, is comparatively venial to such a contradiction of essence as relying upon the effect of masonry in a ferro-concrete wall.

The results of the discussion have up to the present been mainly negative. What are the more positive results of this revolution in constructional architecture? The losses seem ominous. Are there not compensating gains, is not the freedom from an age-long bondage to be welcomed, cannot artistic imagination conceive new delight in the expression of a construction wherein the increased strength of slender pier, long-bearing lintel and wonder-working cantilever shall be employed?

One of the first positive observations is that concrete building is economical only in the largest structures. The new material is proving its value in the competition with traditions in big rather than small examples. At first in the great retaining walls of wharves and docks, then in embankments and bridges, in the latter developing shapeliness that suggests architectural purpose. The erection in concrete of great warehouses and factories ensues, and ultimately buildings that claim attention in important places, and, therefore, a fuller consideration of appearance and harmony with public feeling, are employing ferro-concrete for external walls.

In these works, up to the last class mentioned, there has been no occasion to avoid the simple expression of purpose; in warehouse and factory building, on the whole, honest pride has proved successfully that the experiment of the new material solves unaffectedly the modern requirements of commercial building The attainment of mass without the adventitious aid of storeys of orders or mammoth cornices has been achieved as directly as in a Gothic castle of stonework. The keep and bailey are not more direct and grim in their expression of purpose than the many-storeyed mill or small arms factory with its daylight saving fronts.

The accomplishment of considerable buildings in concrete without any resort to the paraphernalia of stonework architecture is a step forward that we should pause to recognise. It is to be realised that our civil and ecclesiastical architecture, heavily labouring in the endeavour to revivify the dead, cannot be reckoned as the most characteristic building expression of our age. It only suggests that architects minister to the prejudices of unperceptive clients—but in our midst, upon a scale far exceeding in volume houses, churches and municipal halls, commercial building is marking our epoch with the factories and storehouses of imperial industry and wealth. Of the mass of this output the brochures of the ferro-concrete system proprietors are sufficient witness; they indicate the volume of the current, its direction and ultimate artistic or architectural import. Contrasted with the trade propaganda of Gothic church furniture in the last generation or with Ideal Home fitments of the present, each dealing with petty and subsidiary things, but all claiming artistic preciousness and so-called architectural style, how refreshing to the architect's advertisement basket it is to be fed with matter representing subjects of vaster scale and almost limitless extent, clothed only for the purposes of utility, and free from artistic affectations! Ferro-concrete has already provided those whose part it is to contemplate the progress of the arts of building from the external standpoint of contemporary architecture with a new conception of simple masses self-reliant and highly expressive of purpose.

A further element is the advent to architecture through ferro-concrete, of an originality that is consequent to the unusual material. The long drawn out desire for a new style may thus find its fulfilment safely and reasonably in the novelty of the substance and method of building. This originality is necessarily natural and unforced. It lies not only in perceiving the architecturalness of big commercial buildings and in obviousness of purpose, but in the new conception of proportion that ferro-concrete involves. The factors of architectural safety are no longer resident in the classic tradition of a stonework "order," originally based on the possible bearing of a marble lintel, with its column architrave and intercolumniation, or upon the apparent balancing of an arch. These have passed away, at all events the logic of their application to concrete building has ceased. We are now accustomed, or becoming so, to any length of span, and therefore, the relation of voids to solid, once a doctrine of design, is freed from stonework precedent —"the case is altered," and we must readjust our canons of design. It will be clear that if the conception of satisfactory proportion, based upon stonework building, is relative to precedent and not absolute ferro-concrete must create its own standards It is, in fact, doing so by every example that frankl

employs its resources. A novel proportion is not of necessity bad, a lesson that Mr. Butterfield strove to teach the Gothic revivalists. If the new relation of dimensions is constructively sound, justification must ensue. The sentiments of the artistic heart will submit, in architecture at all events, to the judgments of the head.

This realisation of the possibility of deliverance from ideal proportions established in masonry by the substitution of a new material is the taking of a very considerable step in the path of architectural progress. It is indeed more radical in its advance and possibilities than the emancipation of English architecture a century ago from the thraldom of the classic tradition by the awakening of romanticism and the revival of Gothic. Within the sphere of those buildings to which on account of their size ferro-concrete is applicable, and these are the largest, the revolution of architectural ideals must involve a readjustment of ideals in design that is searchingly fundamental.

A final positive gain to architecture in the advent of ferro-concrete is the new spirit of artistic and constructional adventure which the elasticity of the material and the novelty of its applications reveal. The inventive genius of designers has always striven to bend the columns of its masonry prison and over-balance its walls. Apparently, that is, to old-fashioned sight, ferro-concrete laughs at the laws of gravity, just as the architects of the baroque rejoiced in an exuberance of fancy that playfully but unnaturally twisted the members of the classical orders into acrobatical energy. What would not Bernini have done in ferro-concrete ? is a question that may be mated with, What would not Brunelleschi have achieved ? Examples are already at hand of first steps on the upward or downward road of freedom or dissipation ; on these we do not at present dwell, but the door is opened, the designer is no longer in a stonework prison. The first freedom should be dedicated to exploring and exemplifying frankly the new characteristics of virility and adaptability which lie in the material. It will be a service demanding courage as well as clear-sightedness, but it is demanded in order to pave the way for the recognition and establishment of the new conceptions of architectural proportion which the use of ferro-concrete has introduced. The dead hand of the past has been lifted from architecture, renaissance is no longer its aim ; like the philosophers and artists of Italy in the Cinquecento we are marching to a dawn, but it is not of the long-set sun of classical precedent, it is in the light of an entirely new science of building that glorious adventure is to be sought.

2. Architectural Forms and Ornament.

The question now will be asked, are the new and special qualities of ferro-concrete building sufficient to provide a satisfying architecture, and if not, for they will not supply the modern designer with either decorative ideas or forms, from whence can he bring material if denied the architectures of masonry or brickwork ? Is it to be expected that this new plastic wall substance will forthwith put forth its own characteristic flowering and in a generation accomplish that for which centuries were requisite in all other historic architectures ? The answer is not as obvious as it might appear to be. " The heir of all the ages " has but recently believed himself qualified to design with Greek, Roman, Gothic and Renaissance spirit, and, in fact, the class rooms and studios of the educational hothouse have cultivated this conceit with some effect. But we must, for the present, leave on one side the provocative subject of historic style, and insist upon the cleanness of the slate whereon the fresh concrete style is to be planned. Can architecture spring out of mere novelty of construction ? Will the elemental qualities suffice to give interest and avoid the importation of extraneous and affected ornamentation ? The qualities that we have already observed to characterise ferro-concrete building comprise a new largeness or freedom of scale, simplicity in directly expressing purpose, originality of treatment, a novel standard and sense of proportion, and the but partially explored possibilities of constructional adventure in design which are not attainable in materials that are wrought when solid.

With such elements and potentialities the architect may begin his consideration of the problems of improvement to which his office appertains. He should primarily recognise and perhaps emphasise the special qualities and purposes of the building and its construction, at all events not dissemble with them as if they were antagonistic to his ideals. He can bring organisation to bear upon the masses of the building by simple symmetrical arrangement, itself the first evidence of civilisation in evolution, balancing and gradating projections both on plan and elevation, in due regard to the premiss of utility. Or by the emphasis of

parts mould irregular masses into picturesque groups of contrasting forms ; for by taking thought, intelligence, or idea, may be imparted to a chaos. Contrast between the horizontal and vertical direction of storeys may be secured and marked by the arrangement and division of openings in the wall. Piers and beams may be expressed as they are necessitated by the construction without other artistic interference, the problems of proportion being left, as already indicated, to the structural engineer, and finally the peculiar outrages upon the ideals of an architecture that knows only stone or brick should be emphasised without modification for the instruction of the ignorant and the furtherance of a standard relative to the peculiar genius of the system of structure. Such suggestions might be multiplied ; they are but general ; each building will furnish its own opportunity for design, but provided that intellectual interest is manifested it may be confidently asserted that artistic result is assured and the path leading to architectural success entered upon, though in a hitherto unexplored territory.

It will doubtless be felt that these proposals, by dealing only with the abstract elements of architecture, still leave the designer without material ; the laws of grammar, the arrangement of parts of speech are of little practical use without a vocabulary, and unless the architectural orator is permitted to employ a language, whether Egyptian, Greek, Italian, French, or English, understood by the eye, he is invalid and helpless to exercise himself. This will be readily admitted for the purposes of argument, but with the reminder that other constructive arts such as shipbuilding have evolved beauty without any presumed reference to antique models. It may even be suggested that the initiation of many great architectural developments has taken place without reliance on artistic precedent. From whence came the Pantheon Dome or the Gothic Minster ? The initial debt in each to architectural parentage is indeed small in comparison with their development.

But the value of historic reference will be freely admitted, even for ferro-concrete, with the purpose of tracing the sources of architectural forms which have become sacrosanct. The sloping walls of the Egyptian pylon with its reeded reinforcements at the angles and cornice, if not the cavetto or gorge itself, are reflections in syenite of a prehistoric and sacred tradition of ancestral reed and mud architecture, the terms of a primeval reinforced concrete transferred by painted representations to later ages of advanced building power. A translated future may await the unabashed directions of ferro-concrete construction and yet excite undesigned æsthetic emotion. In the forms employed by the Greeks for their glorious sacred buildings an intelligent archæologist discerns under the beauty of the marble an original idea alien to the material and its constructive method. And Rome, so modern in its use of architectural ideas, has left us structures in which we disregard the laboured applied features but gain inspiration from its vaults and cofferings freely adorned with stucco.

Mediæval England, in its virility and insularity, reveals, in what we call its Perpendicular phase, a consistency of decorative idea coupled with a determined and successful reduction of walls and piers to their minimum for stability. Each historic epoch or style will yield inspiration to the student who earnestly seeks to impart something of his own, of himself, to a design for execution in a new material.

Perhaps the way may be opened for expressing an architecture of ferro-concrete in what we call a historic style. I do not think this is to be desired, but the attempt should be made to imagine what a Theban, Athenian, Roman or Gothic builder would have done, in his simplicity or with his traditional ideas, if faced with the problem, so difficult to a modern designer, of conceiving a ferro-concrete building architecturally without affectation. History will yield analogy, but scarcely example. It may be urged that ornamental plasterwork is practicable all over the surface of a concrete wall. It is indeed possible that we may suffer from the delusions of architects expressed in concrete, as we have to sometimes in more ordinary materials, for it is evident that no restraint appals or limits the imperious necessity of advertisement in prominent situations. It should be remembered that the charm of Elizabethan ribbed or strapwork plaster ceilings is largely due to horizontal lighting and freedom from dust. We may feel fairly sure that only one or two experiments on vertical fronts exposed to the weather and grime would be needed to deprive the idea of using them as a type for wall decoration of any popularity.

Dismissing from consideration the reproduction of masonry features, as well as the historic

craftsmanship of modelled plaster work, some provision must be suggested for the eager artist who may have an important site for his production.

The crux is detail and ornament ; novelty of material and proportions are provided, and the purpose of the building will be expressed by its general shape. The student may be recommended to rely upon his studies. If Greek, Roman, or Gothic, the characteristic adaptation which each employed, when decorating one material with forms derived from another integrally and structurally different, will afford a clue and starting point for scholarly advance in the new material. We cannot and need not begin in ornament, any more than in literature, as if we had no past and were originating truth. What we may call decorative instinct will always be required, but the advice may be pressed to master the thought of a great epoch in architecture rather than its forms, and with its motives duly comprehended proceed to do as you believe the masters would have done. It may be that some human sculptural interest may be at your disposal. A little figure modelling on a flat wall will go a long way, and the architect will then be content to waive the special interest of architectural enrichment on behalf of the greater art of sculpture.

The treatment of surfaces by providing a texture of finish for the concrete, suggests possibilities that may be at once economical and interesting. Rural plastering furnishes many picturesque examples of fancy pricking, graining the plaster with a tool much as a painter used to. Sgraffito can be revived ; it would ennoble the whole subject of concrete architecture if exercised by the efficient designers who certainly exist among us. A rich field in the Italian art lies at the hand of the artist. Something also may be said to indicate the possible field for mosaic or ceramic inlays on a concrete façade. It may be confidently suggested that a coat of such facing material, less than an inch in thickness, will prove to be much more economical of cost —as well as space—than the clothing with stone or brick that ferro-concrete buildings in cities now adopt. Therefore cover the whole surface with mosaic if you intend to use it at all. Treat the design as a rich garment of pattern and colour, bordering the elevation as you would a tapestry, carpet it vertically and escape from all the implications of false structure in your idea. The possibilities for street façades are such that one would wish for a ferro-concrete city faced with mosaic, brilliant in colour, clean and ever fresh, and by its existence founding a school of mural artists who would take a share, never yet afforded to them in England, in making our streets joyously beautiful to all who pass by.

3. Architectural Education in Relation to the Design of Ferro-Concrete.

The scientific or constructional aspects of ferro-concrete building are, on all hands, dealt with ; the subject is interesting and lends itself to text-book and class instruction, and as the demand for trained specialists for engineers and architects' assistants increases the constituency of students grows. The schools of architecture either directly or indirectly through association with schools of engineering provide courses for architects in this single aspect of the great subject.

But it has not yet been realised by the Board of Architectural Education of the Institute that its examinations, which provide the syllabus of study in all the schools that it recognises, have no knowledge of the essential truth that training and exercise in the art of building in stone or solid materials is of little or no artistic service to the architect in ferro-concrete. It must be emphasised that the responsibility of the Institute in this matter is the more considerable as in practice the professional teachers of architecture throughout the sphere of the Institute's examinations, which covers the British Empire, do not extend their outlook much beyond its syllabus. To put the problem bluntly, what good will the laborious study of the orders of stonework architecture be to the practitioner in ferro-concrete ? The effect of such wasted study is misleading both to the student and to the public and ultimately is inimical to architectural progress.

The case may well be supposed, in fact it exists, that engineering students of ferro-concrete construction desirous of some acquaintance with the principles of architectural design seek the assistance of a school organised on the basis of the Institute examinations. The discovery must then be made that the educational system has become so detached from practical work and reality that its provision for students of the art of concrete architecture is naught but the basis of Vitruvius with an appendix on the Gothic Revival.

That this is no caricature the intermediate examination papers of the Board will make clear.

It is necessary as pertaining to the subject of the Architecture of Concrete to consider the greatness of the opportunity which is now opening before us for an advance that shall be general in the study of the essentials of architecture, of its relation to constructional progress and to artistic criticism and analysis. It will be lamentable if the lamp of progress passes entirely in building from the hands of architects to energetic constructional firms and their engineers. Architecture long ago, say about the time of the erection of the 1851 Exhibition, lost the opportunity of including iron structures within the art—the prejudices of Pugin and Ruskin had not a little to do with that—and the British engineers since then have carried the standard of progressive construction. In the advent of ferro-concrete a new opportunity may be hailed for architecture if the leaders of the profession are at all conscious of the universality of their art. The opportunity is not merely that of becoming constructors but of leading an authentic development of building practice, along the paths of organised study with artistic discrimination and enthusiasm as it rapidly grows in usefulness to the world. This awakening of the profession of architecture from the curious dreams of the Renaissance and revivals to a new view of that everliving present which, in spite of all traditions, insists upon its urgency and in which our responsibility cannot be evaded, may arise from the necessity of preparation by education and practice for that Architecture of Concrete which has come upon us to search and reorganise our ideals.

Discussion

(MR. EDWARD P. WARREN [*F.*] IN THE CHAIR.)

Sir E. OWEN WILLIAMS, K.B.E.: It has been my privilege to read this excellent paper, and it is my greater privilege to propose a vote of thanks to Professor Pite for a most thought-provoking contribution. I think perhaps I may be permitted to summarise my view of his paper in saying that he does not wish to be dogmatic, he simply wishes to invite criticism and thought on a new subject. The title by which the paper was announced was "The Architectural Treatment of Reinforced Concrete," but in my proof I think the title is improved by being worded "The Architecture of Concrete." To me, the word "treatment" seems to suggest that the material requires a doctor; and I really think the material does require doctoring, as we now know it.

It is interesting to follow the path by which reinforced concrete has acquired this stigma. Why has reinforced concrete fallen into architectural obloquy? It is a material which was new, and required new methods to exploit; and, so far, it has been exploited on one basis only, and that is the basis of first cost. Very few designs in reinforced concrete have been constructed in which the criterion of first cost has not been the only consideration. I think, really, that architects are largely to blame for that. They invite competitive designs for a structure; engineers in conjunction with contractors provide designs on the basis of money, and the result is a very spindly construction. Then architects say, "This is a material which defies all the canons of architecture." I maintain that if you put out to tender on the basis of design coupled with cost, you will be staggered at the dimensions to which engineers will reduce brick columns. Then, I suppose, the architects would say, "This looks very skinny, I shall have to put more brickwork round these columns," and they would put it without bond, and the result would be a sham. Most reinforced concrete buildings to-day are skinny, with sham treatment to give them the appearance of robustness which they do not really possess.

The early history of reinforced concrete has the advantage, however, that we had to start from zero; we know what is the minimum amount of material which can be put to do the job from the point of view of first cost. After that, other considerations will come in, such as the matter of permanency, the matter of beauty. From the zero start can be built up a structure which is not a building of affectation, but one which has grown into a robust state of health by a process of evolution from zero.

The last slide showed a very good example of the early defects and failures of reinforced concrete, for in it we saw a roof constructed in reinforced concrete simply as a copy of a timber roof. Concrete should be used so that its peculiar properties are utilised. It can be made to copy existing forms—it is the obvious thing to do, to reproduce the beam and the slab, because we have been making beams for centuries. But concrete can do things where no beams are necessary. And that is the future of reinforced concrete. Its own peculiar properties should be evolved.

Professor Pite referred to the technique. The only foundation for technique of a material is, of course, practical observation of its processes. He takes exception to horizontal courses and rustications. It is a practical part of the construction of a concrete wall that no more than 3 feet of concrete should be deposited in one day; otherwise excessive pressures are induced upon the shuttering. That means that, whether you wish it or not, at every three feet in height of the wall there must be a line. It may be a poor line, or an irregular one, but it is a joint between two days' work, and I maintain that some treatment is necessary to cover up the joint. I do not say that rustication, in the sense of a copy of masonry joints, is desirable. I am inclined to think you could have lift courses—that is, that every lift of shutter should be at an angle, so that you had a definite horizontal shadow at every joint.

Another feature like the horizontal joint—the two go together—is the expansion joint. The monolithic character of a concrete building is over-stressed. It is not a building without joints. Whether you want them or not, you will get either cracks prearranged, or cracks not prearranged. The desirable thing is to have a vertical joint every 40 feet from the horizontal. Then you definitely make the structure move and breathe at that particular point. It should not be more than 40 feet from the next, preferably less. Vertical joints are not peculiar to concrete. The change from lime mortar to cement mortar also means that brickwork acts in the same way. The change from lime to cement is not simply a change in the specification, it is a change in the nature of the material. Brickwork in cement is a concrete in which the bricks are prearranged aggregate, and bound by cement. A brick-work wall built with half cement will also crack every 40 feet. It is a change from individual units into units bound together and forming a homogeneous and cohesive mass. So the problem of expansion joints is also a problem in cement brickwork.

Throughout Professor Pite's paper I find that he has discarded arches; he feels that arches are no more. I have a very definite opinion that the only permanent structural element is the arch. It is the only member in which tension can be eliminated, leaving only compression: that is to say, that the structure then depends entirely on the force of gravity. The introduction of tensile stresses into a structure introduces disruptive forces. The introduction of steel into concrete presupposes tensile stresses, the introduction of steel also means corrosion. Professor Pite imagines the ancients using reinforced concrete for monumental buildings; I feel they would never have used reinforced concrete for monumental buildings. The function of reinforced concrete is as a commercial expedient for the production of cheap buildings, to last a period not exceeding 100 years. But that is only in common with all the modern expedients such as steelwork, or any structure containing steel. But I think that, had the ancients known the secrets of concrete as we know them, they would have built in concrete without reinforcement, and that they would still have built in arches, and that their structures would have appeared no less robust than they do now.

Professor Pite refers to the leaving of the proportions to the structural engineer. I suggest to the Institute that when they leave it to the constructional engineer they should not leave it to him on the basis of first cost.

I have great pleasure in proposing this vote of thanks.

Professor W. ROTHENSTEIN (Principal of the Royal College of Art): It gives me particular pleasure to second Sir Owen Williams' vote of thanks to-night, because the much abused title of Professor justifies itself when you get, say, one of Professor Pite's long experience as a teacher, sharing such vision and sympathy with a new vision. It would seem that the adoption of the academic robe, which Professor Pite wears in so dignified a way, serves rather to rejuvenate than to chasten enthusiasm. No one who has seen the pictures which Professor Pite has thrown on the screen can fail to see a new hope in the intelligent and honest use of new materials, and a new system of dynamics. If artists and craftsmen are to co-operate with this new form of architecture, I hope the old system, of asking them in at the last moment to co-operate with the building, very much on the cheap, may not be carried into the new system. If craftsmen are to serve, they should be paid as honestly as the plasterers, the bricklayers and the carpenters. If, however, you adhere to the old sham-applied ornaments, it matters little whether they serve new masters or old. I was touched when I heard Sir Owen Williams' appeal for something other than the usual cheeseparing contract.

When I saw the slides, I realised that to-day, as always, the arts are indeed one; and just as you had the same forms in the 14th, 16th or 18th centuries in painting and sculpture, that precipitated themselves into the shapes and construction of buildings, so to-day, a movement similar in character to that just illustrated on the screen is shaping itself in the world of design, of painting and of sculpture. I feel that this new orientation of the arts, which seems so unsympathetic to many who prefer to look back lovingly, and wistfully, to the past, should appeal strongly to the builders, architects and engineers who are shaping new forms in concrete and iron. I second most heartily the vote of thanks so ably and generously proposed by Sir Owen Williams to my old friend and colleague, Professor Beresford Pite.

Mr. MAXWELL AYRTON [*F.*]: I have listened, as I am sure we all have, with interest to the paper. It seems to me that years ago the traditional use of such materials as brick and stone were destroyed by steel frame-work, and that instead of holding reinforced concrete to blame for this—and possibly being afraid of it from that point of view—we should welcome it as the only possible material which can meet modern demands. In great commercial buildings we have long since lost any real sense of stone and brick, and here we have a means of building with real sense in a new material. The trouble so far has been that reinforced concrete has only been used by architects merely to replace steel framing, and it has not been used conscientiously in the building as a whole. Only when we get down to it, and use it in its own nakedness and trust to the concrete itself as the finished building, shall we do justice to reinforced concrete.

Some of the slides shown to-night are obviously not of reinforced concrete buildings; covered with plaster or stucco their construction may be of any form. A real reinforced concrete building must be concrete and only concrete. If we are going to cover it with plaster or with mosaic we are shirking the problem and are no further forward.

I feel with Sir Owen that we should not stress too strongly the fine exactness in dimensions possible in reinforced concrete. Very few of us, if we are designing a stone column, calculate the exact area of that column, and reduce it to the load it will safely carry. If we want a 2-foot column, we have it, considering it only from the point of view of design. A reinforced concrete column might do with a 6-inch, but why should we sit down and imagine that in future we have to design spiders' webs? It is not fair to the material. That feeling has arisen from the fact that up till now architects have used reinforced concrete merely as they use steel framing, to be covered up as quickly as possible, and so long as we do cover it up we shall not be getting any "forrader." It is only engineers who have had the courage to use it as architecturally as they can; and it is for us now to get down to it and see what we can do, treat it seriously and generously, or we shall lose all the work which is going in that direction.

One of the firms whose work we have seen to-night produces a book which shows that they have built some 500 bridges in the British Isles in the last twenty years. There are several other such firms, and there is no question about it that the majority of them are dreadful architecturally.

I feel very strongly that this is a science which architects can never hope to take over entirely; it is far too complex and scientific a business to be thrown in as a side issue of an architect's work. But its use should have this great benefit, that of bringing architects and engineers more closely together, a thing very urgently needed.

Mr. A. R. SAGE, M.B.E. (Principal, L.C.C. School of Building, Brixton): I sometimes wonder whether, in dealing with reinforced concrete, the architect and the constructional engineer are divorced. If we can find a bridge by which they can work in close harmony, we shall eliminate some of the difficulties under which we labour in connection with reinforced concrete.

In the paper, Professor Pite made use of the simile that grammar would be useless without a vocabulary. I take it he meant that grammar should occupy a place somewhat similar to architectural style, and the vocabulary should be the parallel of the building. If that is so, I suggest that in languages the vocabulary came first, and then grammar was built up on the vocabulary. We can follow that idea further. If we take our reinforced concrete buildings as forming a vocabulary, and from that build up our laws of construction, we may evolve some artistic style in reinforced concrete buildings. The fact remains that the modern building has given birth to a child of which it does not seem to be particularly proud. We have the option of destroying the child, or making the best of a bad job and clothing it. I think it is best to put up with it as it is, and it is to be hoped that each succeeding child that is born will be an improvement on its predecessor. I think the time will come when a child will be born which will rival the Greeks in beauty and grace, and will be able to stand naked and unashamed. In the meantime, we clothe it, put it in some form of plaster.

Mr. W. J. H. LEVERTON [*Licentiate*]: I was pleased to hear Mr. Ayrton's remark that in designing in concrete there is no need to skin the building to the minimum. There is no reason why the architect should not state the proportion. It does not follow that because of that he will spend more money on it, because if you have a big column instead of a thin one, you need not have so rich a concrete; so the chances are that your big column made of poor concrete will cost no more than a thin column with rich concrete, and the architectural effect will be finer.

Dr. J. W. MACKAIL: I am not in a position to speak at length on this important subject, but there is one question I would like to ask, on a matter which troubled me a little during the interesting address which we have listened to. It is this. Professor Pite appeared to draw a sharp distinction, as regards the use of ferro-concrete in architecture, between large and small buildings; that is to say, he appeared to regard ferro-concrete as a suitable substance for the erection of large public buildings: warehouses, bridges, etc., but as unsuitable for ordinary domestic architecture and for buildings of a smaller sort. If that is so, it seems to show that there is a defect somewhere. Otherwise the whole thing should not be separable into these

two methods. If any inference is to be drawn from the slides which were shown, it is that the application of the new material and the new method to the construction of small houses, even cottages, is as effective for its particular purposes as its application to large buildings, of which we were shown several examples. That is a point on which I would like a little more light thrown, if possible.

Sir RICHARD S. PAGET, Bart. [*Hon. A.R.I.B.A.*]: There is an essential difference between the architecture of the future and that of the past, and that is in the economy of human labour. In the past, architecture was based on the use of slave labour ; but in the architecture of the future, I suggest, very much the same considerations will apply as in engineering. No one would think of adding ornament to a locomotive, for instance, because if such an engine is made heavier than it need be, it will be less perfect for its function. I imagine that in the future you will attempt to make your structure not only beautiful, but as economical in human labour as you can. That is to say, you will fine it down, and the measure of your success in fining it down will be one of the chief elements of beauty in the structure.

Professor LIONEL BUDDEN [*A.*] : When I came here to-night it was with no intention of speaking, but Professor Pite stated that the vision of the constructional teachers in the schools of architecture was limited and determined by the examinations of the Royal Institute. I submit that that is not the case. If, in the first instance, teaching in schools of architecture did not go considerably beyond the Institute's examinations, the Institute would not be justified in delegating the qualifying powers which it has to these schools. Professor Pite, I think, caricatured the teaching of construction as given in the schools. In the first place, all constructional work in the future is not going to be work in reinforced concrete ; much of it will and must be in brick and stone, and instruction in that must still be given in the schools. But the suggestion that the schools do not teach steel or reinforced concrete construction is a misrepresentation of the facts. To say the schools are unaware of this revolution in concrete, or that they are ignoring it, does not represent what is happening. I have not an intimate knowledge of more than one school of architecture, but I have indirect knowledge of the teaching carried on in two or three of the larger schools ; and in all of them advanced steel work considerably beyond the standard of the Institute Final is taught, and advanced work in reinforced concrete. The evidence of that was exhibited at Devonshire House at the International Congress on Architectural Education last summer. I heard practising members of this Institute, on looking at those elaborate working drawings, say, " It is all very well for these students to work these things out in detail, I suppose they have time for it, but when they get into practice they will find that this kind of thing has to be pushed on to the engineers." I think that is a sufficient reply to the suggestion that teaching in reinforced concrete and constructional steel is neglected in the schools of architecture.

The CHAIRMAN : I also have been enormously interested in Professor Pite's lecture ; but he did not mention the fact that reinforcement, even metal reinforcement in concrete, is no modern thing. It was known by the Romans, and was used in the Baths of Caracalla, where you will see iron used to reinforce it. And reinforcement of various kinds has been habitual in sculptures, in plaster casts and bronzes, at the time of Cellini and even before that.

I do not propose to give you my views on the subject of ferro-concrete, but there is a middle view to be taken between extremists like Mr. Ayrton, who thinks that ferro-concrete should be shown for its own beauty, and the suggestions of Mr. Pite as to clothing. It is a question of choice. Where the surface of concrete has its right architectural effect unadorned, show it ; but where you regard your concrete merely as a basis of the effect you want to get, why not use it that way ?

The vote of thanks was then put to the meeting and carried by acclamation.

Professor BERESFORD PITE (in reply) : I beg to thank you most cordially for your patience and for your vote of thanks. My friend Professor Budden has completely misunderstood me. I acknowledge in my paper, twice over, as he will see when he reads it, that the technical teaching of ferro-concrete is pursued in the schools, and most industriously.

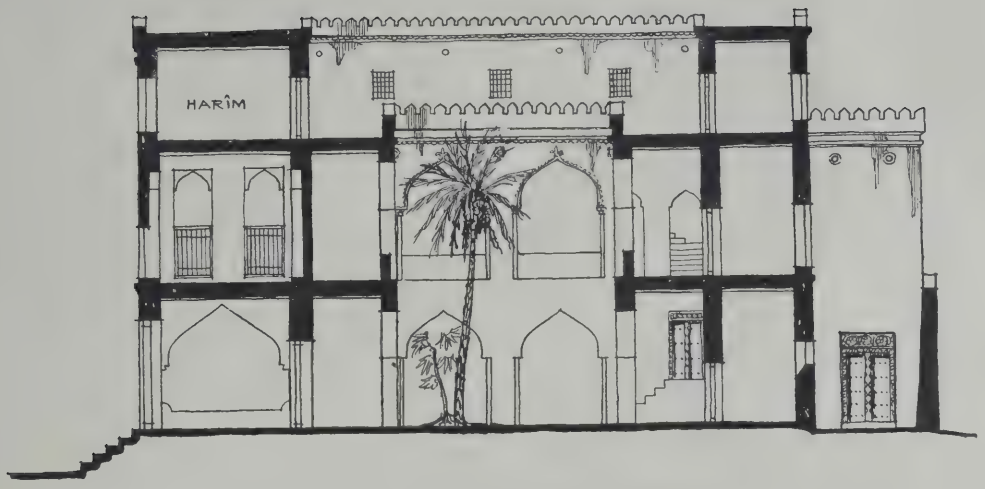
Sir Richard Paget's remarks about slave labour in connection with architecture in general, and the way in which we have got to the other end of the extreme, are exceedingly interesting. Mr. Sage, last week, had a demonstration of a thousand students, and the President of this Institute went down and distributed the prizes. When the votes of thanks came to be proposed, there was a glorious tilt between a master-builder and one of the organisers in the Trade Unions, which lifted the atmosphere into the electrical zone. Our friend the Trade Union brother waxed very eloquent on the glories of ancient buildings and the wonders of Roman art, and how the men of the present day ought to have the opportunity of cultivating this. How touching it is that the real monuments by which the world is inspired to-day, whether in India, Egypt or Rome, were erected by unpaid labour. We have to economise labour, and the value of ferro-concrete is, of course, its economy.

I do not want to see as much concrete as I can, I want to see as little of it as I can ; it is not as if it was precious marble.

With regard to Dr. Mackail's point, probably I did not make it clear that at the present moment we find, practically, that ferro-concrete is only economical in large buildings. In all the troubles over housing we have not had put before us any scheme for employing ferro-concrete. We have left concrete blocks out of consideration ; they are a very considerable substitute for brick and stone blocks. Ferro-concrete demands a large and great building ; and just as one would deal with the architecture of granite, the architecture of Egypt without reference to smaller buildings, so we deal with this substance.

I am much obliged to Sir Owen Williams for the careful and diligent criticism of the paper, and for the very interesting and important remarks he made on the subject of joints of expansion. But he misunderstood me if he thinks I have any objection to any expression in the building of the nature of the material. It is for that I am pleading. If you want a lap joint at the end of every day's work, the architect ought to know it and ought to express it. And if you want a vertical joint on maximal lengths of 40 feet, it should be expressed. I learned, many years ago from my friend Mr. Mansard, that there were expansion joints in London Bridge. He said, "Do you think that with the sun pouring down on that bridge a quarter of a mile long there would not be expansion joints ?" I helped him with the architectural trimmings of the Birmingham Waterworks Dam, where there is a great wall without a joint in ; but the risk of a joint with all that weight of water was too enormous. The expansion joints were at the far end, where the great dam expanded in the hills on each side.

The more light, knowledge and intelligence that architects have on this subject of the action of concrete the better, and the expression should not follow the myth of rusticated masonry, which is a cheap-jack motive. It is the rascality of masonry which has become a virtue by reason of its hoary antiquity.



SECTION · OF · ARAB HOUSE

The Arab Architecture of Zanzibar

BY P. C. HARRIS [*A.*], ARCHITECT IN THE PUBLIC WORKS DEPARTMENT, ZANZIBAR.

THERE will always be romance associated with the name of Zanzibar, which, though now indicating only the island protectorate close to the East African coast, at one time included the whole "Zenj" empire roughly comprising the island of Zanzibar and Pemba and a coastal strip of the mainland as far inland as the rule of the various governors extended.

A brief survey of its history is necessary to understand the comparatively unpretentious monuments of this outpost of one of the great schools of Islamic architecture. Though known before the Christian era to Greek and Egyptian navigators and, it is thought, to the Sumerians, it appears that it was not until after the settlement of the Oman Arabs in the seventh century A.D. that the island and coast became the famous emporium from which were shipped spices and negro slaves for Baghdad and cities of Arabia. Since then the islands have suffered incursions of various negroid races, Persian settlements in the eleventh and twelvth centuries A.D. and a short but troublous Portuguese rule early in the sixteenth century.

The British association with Zanzibar island dates from 1591 with the arrival of the *Edward Bonaventure*. The subsequent chequered history under various Sultans differs little from that of other eastern states. After the suppression of the slave trade in the last century the island has secured most of the trade of the world in cloves.

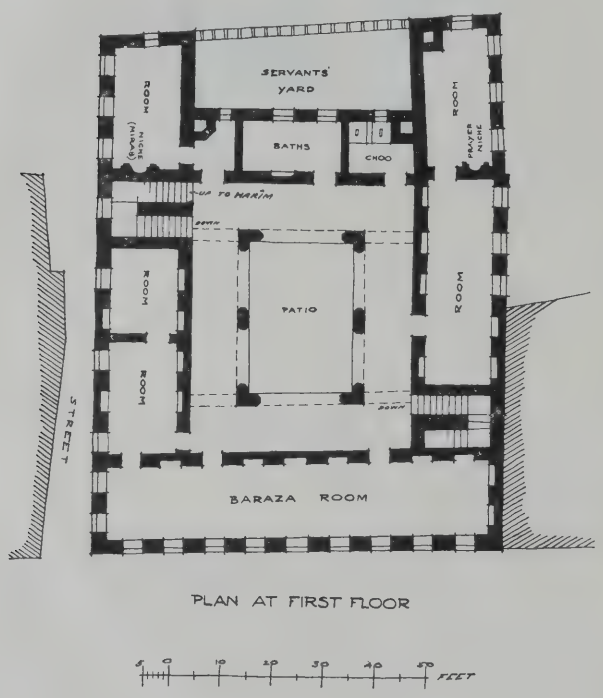
Of the later events none have much influenced the architecture except the immigration of Indian artisans in the last century.

From the long association with the Persian Gulf it is natural to find here one of the ramifications of the school of Mesopotamia and Persia, not the least interesting of the five great schools of Islamic art. This school seems to have borrowed largely from Assyrian and older traditions and the work of the Sasanid dynasty A.D. 226–641, which is evident from the study of Arab buildings in those countries. It is to be regretted that in Zanzibar the lack of durable building material and the destructive power of tropical vegetation should have obscured so much history and left us few buildings of more than antiquarian interest.

The Arabs are often accused of having brought to

their dominions little but the scimitar and Qur'ān, and having served the arts merely by employing native artificers to adapt to their needs the styles of the conquered. They have always, however, clothed all borrowed styles with their own characteristics without disguising origins. This Arab character in the work of Zanzibar thinly overlies forms very reminiscent of Assyria. This idea is borne out by the frequent use of rosette and conventional palm ornament, and in the use of square indented battlements and stunted obelisk shapes.

The only available building materials were coral



Arab House

rag, used as rubble, set in a mortar of lime and red earth, which requires plaster to exclude rain and vegetation, and short mangrove poles " boritis," wherewith to ceil the long narrow rooms thus resulting. On these " boritis " loose stones were placed and above lime concrete of coral aggregate to a depth of eighteen inches or more, thus forming floors of flat roofs. This construction is traditional and still in use, though in places tentative domes and waggon vaults exist.

There are about the island ruins of walled towns and once important strongholds of considerable extent, such as Tumbatu and Kizimkazi. These must in their day have been similar to the present town of Zanzibar, which is said to have supplanted a former capital further south, and claims no great antiquity as a whole. It is a picturesque town of narrow winding streets of Arab mansions intermingled with bazaars and graveyards, and is similar to the old parts of Mombasa.

There is in Zanzibar an old Portuguese fortress, now mostly ruinous, which has none of the rugged barbarity of the famous Jesus fort at Mombasa.

The typical house possesses a courtyard, around which are grouped the principal rooms, on the first floor for coolness. The top floor is given up to the harîm for seclusion and security, while the ground floor, lighted only by small barred openings, is given over to the servants. There is generally a Turkish bath and primitive sanitary arrangements consisting of one or more shafts carried down through all floors to a cesspit. On account of the permeation of sea water in the underlying coral this last has not proved as deadly as might be expected. It is popularly supposed that slaves were buried alive in the foundations.

Most of the ornamentation is lavished on the great carved doors, generally of the wood of the Jack fruit or of imported teak, of which the many hundred examples are admired by visitors. These doors are often of fine scale and seem to have indicated the prestige of their owners. The rows of sharpened studs with which they are adorned are a decorative survival of more picturesque days when a door was forced by driving infuriated beasts against it. The central carved locking post, of which the origin is problematical, is securely fixed to one leaf of the door, and may have served for greater security. Quotations from the Qur'ān on the frieze and a surrounding moulding of carved chain are said to have debarred the entrance of evil jinns. Rosettes and variations of the " traveller " palm are the most frequent motifs for the carving of the jambs and architraves which springs from inverted dolphins. The later doors show the influence of Indian craftsmen. Natural forms are used more freely than is consistent with Mahommedan custom, especially in the pierced stone grilles used in the older mosques and houses in place of windows.

Since the prevailing Mahommedan sect in Zanzibar was that of the Ibathi, who are opposed to ostentation in religious buildings, the mosques are severely plain and inconspicuous. They have not the usual central court, and consist of a series of arcades, at right angles to the main axis, supporting a flat roof. Some ornament is bestowed on the " Mihrab," the niche indicating " Quiblah," the direction of Mecca, and adjoining this is sometimes built in the thickness of the wall the " mimbar " or pulpit. The entrance to the mosque is generally at the opposite end to the mihrab and has the ablution place adjoining. Light is admitted by barred windows placed level with the floor,

possibly, as Sir Richard Burton asserts, to enable the worshippers to expectorate outside. The Muezzin calls the hours of prayer from the roof, the original practice still maintained by the Ibathi sect.

There is in Zanzibar town but one mosque having a properly formed minaret. This is the Sunni mosque in the Malindi quarter. This minaret is of a primitive shape somewhat common about this coast and in buildings in the Libyan desert. Towers of this shape can be seen in Assyrian bas-reliefs.

Records exist of the foundation of the now ruinous mosque at Kizinkazi in 1107 A.D., and there are in Pemba ruins of mosques of contemporary or earlier dates and a number of thickly overgrown remains which have not yet been properly investigated.

The palaces of former Sultans at Bet-el-Ras, 'Mtoni, and elsewhere in Zanzibar, now picturesque ruins, have little architectural interest. They date from the last century and are a medley of Arab forms and base western importations. They are worth some investigation, however, for their Turkish baths, which were once lined with imported marble and are vaulted. In the palace of Chukwani some sultan, apparently returning from Europe enthusiastic for

ARAB · HOUSE · BY · QUAY
ZANZIBAR
Parapet · recently · restored
and · glazing · modern.

Arab Doorway, Zanzibar

western ideas, has had erected a range of windows as in a railway carriage with straps to pull up !

The Zanzibar Arabs are a dying race and with the effacement of the former barbarities of the slave trade has come the gradual disappearance of their art, which

PIERCED STONE GRILLE
ZANZIBAR

is now being supplanted by the worst products of Europe as interpreted by the now considerable Indian population, who have almost lost all art of their own.

The writer is indebted to Mr. W. H. Ingrams, Assistant District Commissioner, Zanzibar, for the historical data of these notes.

Reviews

SOME MANCHESTER STREETS AND THEIR BUILDINGS. *By Professor C. H. Reilly.* 126 *pp.* 5*s. net.*

SOME ARCHITECTURAL PROBLEMS OF TO-DAY. *By Professor C. H. Reilly.* 205 *pp.* 5*s. net.*

[*Both published by the University Press of Liverpool, Ltd., and Hodder & Stoughton, Ltd., London.*]

These two books by Professor Reilly mark a new stage in architectural criticism. At last an architect has appeared who is willing to address himself seriously to the task of analysing and describing for the benefit of the public what the public sees with its eyes but not yet with its mind—namely, the quite ordinary buildings of our modern towns, the buildings most of us pass by with disgust or indifference. The public is tolerant of these buildings because it is inarticulate, and it is inarticulate for the simple reason that it has never been taught the language of civic architecture. If only this language had been made familiar to it from the very beginning of the industrial era in this country, we should have been spared the rapid uglification of our towns which took place what time our architectural preceptors, ignoring the more fundamental aspects of their art, talked learnedly about construction and craftsmanship and other matters, important perhaps in themselves but having little relevance to a general policy of civic building. The result was that the Victorians could construct wonderfully, their craftsmanship was technically superb, and yet they could scarcely set two buildings beside each other without creating a discord.

On behalf of architecture Professor Reilly goes into the market-place and tells us what is really wrong with so much of our modern urban buildings. The task he has chosen is a difficult one because, when in the presence of the nondescript and insignificant, our first tendency is to pass it by without comment. " Really," we say, " we can't be bothered to waste time over that kind of thing." But unfortunately " that kind of thing " is spoiling our towns ; and while it may be pleasant to concentrate our attention upon examples of good building either at home or abroad, it is also necessary to eliminate the bad buildings which outnumber the former by ten to one and by their mere propinquity defeat the æsthetic intention of the good buildings. Even a few hooligans can turn a most distinguished assembly into a brawl, and how much worse is the case when the undisciplined element is in a vast majority !

Professor Reilly attributes our present architectural anarchy to the Gothic Revivalists, who broke up the great English tradition of urban building. " It is appalling," he says, " to imagine the infinite damage that that movement of earnest but archæologically-minded men has done for us and our inheritance. We pride ourselves as a nation on our strong conservatism and common sense, but in truth we are more sentimental, more easily swept away, by Romantic high-falutin' than any other race except the purely Teutonic ones. Ruskin simply turned us, or rather our houses, upside down. The quiet, dignified old England of Rowlandson's drawings—I refer to the houses, not to the people —was changed to the speckled red and white, the pink and blue irregularly strewn crumbs of any awkward pointed shape of which Bournemouth, wholly built in Ruskinian and post-Ruskinian times, provides the supreme example."

Besides Bournemouth and many residential towns like it, the great industrial cities have suffered equally from the failure to understand the main principles which should determine the architecture of streets.

Professor Reilly, in these two attractive volumes, *Some Manchester Streets and Their Buildings* and *Some Architectural Problems of To-day* [each published at the popular price of 5s. by the University Press of Liverpool in conjunction with Hodder and Stoughton], has placed before the general public the very doctrines which, if accepted by it, would lead to a speedy improvement of the present state of urban architecture. The first of the volumes mentioned is a critical analysis of the principal streets of Manchester. Before giving my impressions of it I have waited until I had an opportunity to visit the city myself and, with Professor Reilly's fascinating guide-book in my hand, to study the actual buildings by reference to his commentary. I found it a most enjoyable and educative occupation. The good, the bad and the indifferent in the architecture of Manchester are here portrayed to us in a manner which leaves no doubt of the justice of the author's good-natured but candid verdicts. A proof of this was the kind way in which Manchester architects received these articles when they appeared in the daily press. Instead of shunning the author they made him their guest. What is now needed is that a host of other critics should be inspired by Professor Reilly to perform similar services for those industrial towns which, when once truly envisaged by their inhabitants, would become unbearable to them.

In the second volume Professor Reilly has collected a number of topical articles dealing with a variety of subjects. Here again the town is his chief interest and he discourses upon types of civic building—churches, banks, railway stations and, of course, the all-important house and cottage. Nor does he confine his attention to England, for his rare understanding of America enables him to draw illuminating comparisons between architectural tendencies in the two countries. Professor Reilly is no slave to any particular style, and while admiring the beauties of Nash's Regent Street he can yet pay a generous tribute to the new Liverpool Cathedral. His article on " Regent Street Old and New," which in the first instance appeared in the *Observer*, best expresses his general outlook upon street architecture. Of the new street he says : " It is the want of submission of the individual building and trader to the whole which has changed the character of the street and has lowered it from its old high level to that of a commonplace, bustling thoroughfare, efficient enough, no doubt, for those who consider it a suburban shopping centre, but not for those who would have wished to see it symbolise again some of the best aspects of our civilisation." The mention of a few headings of the chapters—" Recent Government Buildings," " The Office Block," " The Emergence of a New Style," " Colour in Street Architecture," " Bath or Bournemouth," " Architecture and Youth," " Fifth Avenue, New York "—will serve to indicate the range of the book. Readers may be recommended to savour its qualities for themselves. Penetrating observations will be found on every page, as when Professor Reilly says : " Now suburbs are only too anxious to turn their backs and pretend they belong to the country—a thoroughly snobbish and suburban proceeding when but for the town they would not exist," or " Scotland Yard is that clever and impossible thing, a compromise between a German Schloss and a French chateau—a sort of reparations settlement with England left out " ; or again, " Our town buildings should pay a conscious tribute to our civilisation instead of being an unconscious revelation of it." A style extraordinarily pleasant and easy to read, enlivened with plenty of wit and with just sufficient spice of malice, is here employed for a very serious architectural end—namely, the upholding of an æsthetic standard by reference to which the public itself may and should become the critic and the guardian of our towns.

A. Trystan Edwards [*A*].

STRUCTURAL DESIGN IN STEEL FRAME BUILDINGS. *By Percy J. Waldram. B. T. Batsford, Holborn.* 12*s.* 6*d. net.*

This text-book is one of the most admirably-produced books of its kind I have ever seen. While it is intended primarily for the use of Structural Engineers, it none the less supplies a want which I am sure has been long felt by architects. This is perhaps chiefly because the matter of the book is confined to the sort of building mostly required in large cities to-day.

The book is arranged in such a way that it has that most useful of qualities not always found in text-books. That is to say, it has great facility of reference. The plates and inset diagrams are well drawn in a strong line and to a scale large enough to be scrutinised in detail without that head-aching eye-strain which usually results from any careful observation of the diagrams in most books on steel construction.

The Introduction gives some interesting observations on the history and development of structural steel design.

In the treatment of the main subject, an actual example of building is taken and worked out with the fullest diagrams and minute details. Besides this, there are about a dozen pages of useful tables and a concise index at the end.

E. Frazer Tomlins.

Correspondence

THE LIGHTING OF PICTURE GALLERIES.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—Mr. Markham's letter, published in your issue of 7 March, and Mr. Percy Waldram's of 21 March, strengthen the regret that it has not been possible ere this for me to bring together in book form, for easy reference, my three articles and many letters published in the JOURNAL ; the articles published in *The Builder* and the letters published in *The Times*.

Had such a work of reference been available Mr. Markham would not have committed himself to the reiteration of the fallacy " that glass must reflect something."

Tests made at Wembley, the FitzWilliam Museum, and Spring Gardens Gallery give conclusive evidence to the contrary, nor would Mr. Waldram have stated that the top-side light method I have brought forward " requires that the spectator should be in a fairly deep shadow."

I have shown that " a deep shadow " is not necessary in order to get rid of the reflections—in fact, as shown in the experiments in the Wallace Collection and at Wembley, the difference in the intensity of light may be so slight as not to be realised by the spectator.

The difference is no greater than that seen at any time when the sun is shining in a gallery having a N–S axis ; then either the east or west side will be the better illuminated and the reflections will be non-existent in the pictures on the better-lighted wall.

He will find also on a re-perusal of my paper that I have not suggested " the screening-off as with a vertical unoccupied partition any view of bright objects on an opposite wall." There is no need to " screen off " the opposite wall. Difference in illumination is all-sufficient —created either by a different intensity of light or by having on one wall only dark pictures with dark frames or any exhibits—as tapestries, etc.—which will absorb light.

Mr. Waldram speaks also of " the apparent waste " which correct lighting involves. I have already shown that a picture gallery can be lighted by the top-side-lighted method in such a way that every picture can be perfectly seen, not only without any extra expense, but even more economically than if erected in the old unscientific and inartistic manner to be seen everywhere.

I am confident this will be proved in the near future by one or other of our well-trained and gifted young architects, by the erection of a gallery—let us hope at Manchester—which will be not only " Scientifically Correct," but " Designed with Beauty," and built in such a way that it shall stand as a witness to the truth that " The excellence of any work of art lies in the complete accomplishment of its purpose."

Yours faithfully, S. HURST SEAGER [*F.*].

To the Editor, JOURNAL R.I.B.A.,—

SIR,—I have read with interest Mr. Waldram's letter in the last number of the JOURNAL, and should like to add a brief word of explanation to my first letter. Mr. Waldram thinks I have not appreciated the fact that two sets of reflections have to be guarded against—the one from the ceiling, the other from persons or objects on the floor. I think I quite appreciated both.

The proposal I made consists merely in an application of the elementary principle governing light reflection ; that the incident and reflected rays lie in the same plane, and the angles they make with the reflecting surface are equal. That being so, it follows that for an observer in a certain position a fixed plane of glass can only reflect a pencil or group of rays coming from one quarter. If, therefore, the glass plane were arranged to reflect a part of the wall surface over the observer's head it could not also reflect rays from somewhere else.

Mr. Waldram, if I understand him aright, states that the reflections of persons or objects on the floor are not subject to the simple geometric law of reflections stated above. This I find it quite impossible to accept.

In common with Mr. Waldram I appreciate very highly the work done by Mr. Hurst Seager, whose labours have chiefly been directed to ascertaining the best form for a new gallery. He finds against a lofty gallery ; but many existing galleries are very lofty, and I think my suggestion ought to be of value in such cases.

There may be other evils to contend with besides direct reflections. For these, no doubt, other remedies are called for ; but if reflections can be got rid of something is attained, and to this alone do my suggestions apply.—Yours truly,

JOHN H. MARKHAM [*F.*].

The Library

FARM HOUSES : SMALL CHATEAUX AND COUNTRY CHURCHES IN FRANCE. By Antonio Di Nardo. Fo. Cleveland, O. 1924. £4 10s. [J. H. Jansen, Cleveland, Ohio.]

The Americans are gleaning with zeal and industry in the European field of Archæology, and in this book much good grain is to be found. It is well got up, the type and printing are admirable, and the illustrations well reproduced.

Mr. Crét's introduction is interesting and picturesque, though disfigured by the terrible word " realtors " (Query, dealers in real estate ?). There are some 280 illustrations, mostly from photographs, with a few charming drawings by the author, which one could wish more numerous.

In spite of the restricted area covered—mostly in Normandy, with a few from Brittany—anyone familiar with the district will miss many worthy subjects, notably from Dol in Brittany, but it is ungrateful to regret what we have not got when the author has given us so much. C. E. S.

The Late Marquess Curzon, K.G., P.C., G.C.S.I., Etc. (Honorary Fellow)

BY THE PRESIDENT (MR. J. ALFRED GOTCH).

By the death of Lord Curzon architecture loses an enlightened patron and a discerning critic. In the public tributes that have been paid to his memory stress has been laid upon the thoroughness with which he mastered the essential details of any subject with which he had to deal. This is true of architecture, with which he had more than the ordinary amateur's acquaintance, yet ever bore in mind that his knowledge was that of an amateur.

His munificence in the restoration or rather preservation of certain old buildings is well known, notable among them being Tattershall Castle. It was on the summit of the tower of that building that I was introduced to him, after the ceremony of re-opening, which took place in the early days of the war, and before the complete absorption of the country in that terrible struggle. Some months later he asked me to go with him to look at another fine ruined house, with which I was familiar, but which he had never seen. We paid two visits and discussed the history of the house and the prospects of repairing it. On the second occasion we spent the greater part of the day there, armed with sandwiches which we ate in a deserted room. Nothing could have been simpler or more genuine than Lord Curzon's behaviour; the Ex-Viceroy of India might have been a fellow-student out on a sketching expedition. But he brought to bear on the investigation the knowledge and experience of a man of the world accustomed to live in large houses, and he subsequently sent me a long report dealing with the problem of how this great house could be, in his opinion, made habitable, if ever the opportunity should occur.

His interest in architecture and his acquaintance with it as well were further shown in his monograph on Kedleston Church, of which he presented a copy to our library. It is excellently done, full of historical detail, and clearly indicating the work which was done to his own orders, and among its pages, withal, one catches glimpses of the masterful spirit which distinguished him. It was his intention to write a similar monograph on the great house of Kedleston, and much is it to be regretted that his intention was not fulfilled, for no pains would have been spared that learning, research and a wide outlook could have suggested.

In another connection I came in contact with Lord Curzon, and that was the Fine Art Commission, of which he was one of the two lay-members. It would be unbecoming to say much without the concurrence of my colleagues, but this may, I think, be said without impropriety, that he would absorb the views of those who had perhaps greater technical knowledge than himself, and then express them briefly, clearly and felicitously. His high position, as well as his personal qualities, made him a most valuable member of the Commission, and it will be a difficult task to find a successor with gifts as great and influence as wide as those he brought to its service.

BY A. S. G. BUTLER [*F.*].

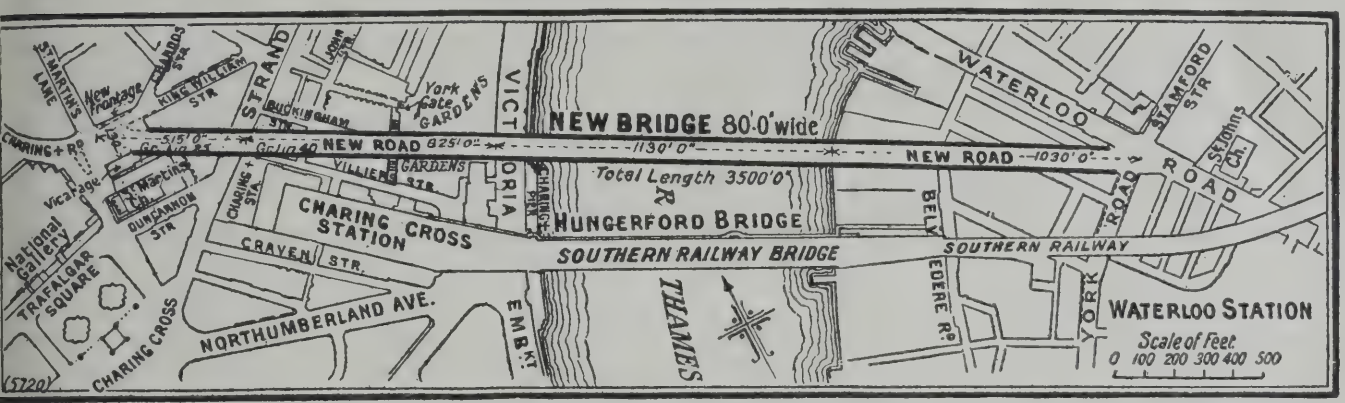
Members of the Institute will have read with regret the news of the death of Lord Curzon, for the reason that he was one of the few important men of our time who understood architecture and took an interest in its encouragement. Some of them will recollect his admirable speech at the opening of the recent exhibition of the Architecture Club. Anyone, too, who has known him intimately in connection with his own building operations will recall that here was at least a man who took the utmost trouble to obtain the very best results, and never spared himself in the effort to achieve the end he sought. In that he paid a high compliment to our art. He really loved a fine building, and always maintained that the preservation of its monuments was of paramount importance to a country. It will be remembered how he inaugurated the care of buildings in India during his viceroyalty, how he took Montacute and renovated it, how he rescued the fireplaces of Tattershall from a dealer, bought the castle, and restored it, superintending the work himself, once a week, while a member of the Cabinet. He restored Bodiam similarly; and in his house at Hackwood and in London surrounded himself with a refinement of splendour which it was impossible not to appreciate for its high quality and perfect taste. But it is the undertaking of the restoration of Kedleston, about a year ago, which is most to be applauded. For this house, possibly Robert Adam's greatest work, was an object of devotion to Lord Curzon, not only because it represented the home of his family for eight hundred years, but much more—I venture to say—for its great value as architecture. That a man in these days, knowing the uncertainty of his life and fearing the climate of the place, should undertake such a task solely out of respect for the age and beauty of his possession is indeed rare, and, I think, displays an attitude of mind of which architects will read with grateful sympathy. I can attest its truth: Lord Curzon did not care for grandeur for its own sake, and despised luxury. He merely liked and insisted on having everything well done. Such a man as a client was, of course, tremendous; no detail, however minute, escaped his attention—not even the tap of a scullery sink or the handle of a boxroom door. They

had to be exactly right, at whatever expenditure of time or trial and rejection of samples. Yet, though the strain of working with a man of such gigantic capacity for taking infinite pains was sometimes almost unbearable, I hope that other members of the profession who, like myself, have had the advantage of his friendship—as well as all the firms in the building world who have made things for him—will forget his frailties and recall his courage and splendid thoroughness. His service demanded an almost exquisite efficiency, which it was worth while trying to give.

Some, perhaps, will deplore with me as well the loss of one who, in unofficial hours, made the most enchanting conversation, always learned, intensely humorous, *never* pompous, and illustrated with reminiscence from an astonishing achievement in every sphere of life.

Charing Cross and Waterloo Bridges

SIR REGINALD BLOMFIELD'S SCHEME



Sir Reginald Blomfield in a letter to *The Times* published on 30 March outlines a new scheme for a new bridge over the Thames in the neighbourhood of Charing Cross. In doing so he explains that he now considers the demolition of the present railway bridge and station impracticable in view of the immense cost involved.

Sir Reginald in the course of his letter writes as follows :—

" The necessary conditions of a new bridge and roadway in the neighbourhood of Charing Cross seem to be that at the south-eastern end the roadway must leave Waterloo Road at an easy angle, with plenty of room for crossing traffic, that it must cross the river at a high level, clear of the Southern Railway property, that it must avoid bringing cross traffic into the Strand, and that at the north-western end it must land from the higher level in a space wide enough to admit of easy turning. As cost has to be closely considered, compensation must be reduced to a minimum. To meet these conditions I venture to make the following suggestion :—

" Starting from the point at which Stamford Street and York Road intersect Waterloo Road at the south-eastern end, the roadway would pass between the Lion Brewery and the Shot Tower, rising by an easy ramp to a high level bridge, carried across the river and the Embankment. The roadway would continue in a straight line to the Strand, at a gradient of 1 in 40, and would cross the Strand by a bridge immediately to the west of Coutts' Bank. Thence it would descend at a gradient of 1 in 25 to a ' Place ' measuring about 240 ft. by 130 ft., formed at the intersection of Charing Cross Road and St. Martin's Lane, opposite the Cavell Memorial. From this centre traffic could go north-west and south-west, and Waterloo Bridge would be relieved of all traffic except from the east and north-east. York Gate, which is at present half buried, could be removed and re-erected further east, on the higher ground in the gardens at the end of York Buildings, where, for the first time, it would be properly seen. The bridge and roadway would be 80 ft. wide, the length from Waterloo Road to the bridge over the Strand would be about 2,985 ft., the total length end to end would be about 3,500 ft.

" The advantages of this scheme are :—

" (1) That it relieves the new bridge of the great cost of compensation to the Southern Railway, and brings it within the range of practical politics.

" (2) That it will relieve Waterloo Bridge of a great part of the traffic and enable the bridge to be preserved in its present form.

" (3) That it provides as direct a transit as is possible for long range traffic, say from the New Kent Road by Waterloo Road, the new bridge and road, and Charing Cross Road to Tottenham Court Road.

" (4) That it involves a minimum of interference with important buildings ; and

" (5) That it brings no cross traffic into the Strand.

" The fate of Waterloo Bridge seems to me to depend on the decision arrived at in regard to a new bridge in its neighbourhood, and the problem of the old bridge and the new should be regarded as one. I venture to put forward this suggestion in the hope that the old bridge may be preserved if it can be shown that a new bridge will answer all purposes of traffic, and can be built at a figure that is not absolutely prohibitive."

The Corporate Spirit in Architecture

DISCUSSION ON MR. FREDERICK R. HIORNS' PAPER (*see* JOURNAL, 21 *March*, *pp.* 301–316).
(MR. WALTER CAVE IN THE CHAIR.)

Professor W. R. LETHABY, in proposing a vote of thanks to Mr. Hiorns, said: I should rise, Sir, with very great pleasure to fulfil this duty if I could speak with any readiness, but, unfortunately, that is a thing I cannot do, therefore I have made a few notes, which I would like to read.

It is very difficult to speak on this admirable paper; there is so much in it that I should like to talk about. But first, before formally moving the vote of thanks, I would add my most earnest personal thanks.

I will first quote a few phrases from the lecture itself, as texts:—

First, "the corporate spirit in architecture."

Second, "natural building and a sincere creative art."

It touched me very much, when we saw these wonderful slides, to see that you all spontaneously recognised two or three common or humble buildings which had risen, somehow or another, as if self-built from the soil.

The third is, "common desire for order and fitness."

Fourth, "the condition is a spiritual one, a question of the right point of view." I want to talk an hour on these; there is material in them for seven sermons.

Fifth, "a common policy towards a common end is required." I feel I want to lecture on that. Sixth, "it is only as a result of a social attitude that we can expect noble sites, streets and houses."

Seventh, "self-expression of the workman is a human need that cannot be suppressed without resultant disorders."

That architecture is indeed a fruit of the corporate spirit none would doubt; but not only is it a product of the community, the essence of any expression which goes beyond that of mechanical service; it is community expression that has any valid reality in architecture. Directly it becomes a personal expression and is isolated from the communal spirit of the time it is a mere vanity or whim. This is one of the great difficulties in talks about architecture, that any expression which counts must be a community expression. That is really the point of the lecture which we have heard to-night. It is the sum, also, of all the prophets: Ruskin, Morris, March Philipps, and the lecturer would, I think, agree in saying that what they mean by architecture, what they really care about, is not grandeur and style, or anything outward; it is the spirit shining through the common expression. In the buildings shown on the screen which you applauded there was obviously no grandeur, none of the style taught in the schools, but there was something about them that moved your hearts; these were human buildings that had come out from the ground through the hearts of humane men.

Of course, there is a sense in which what we now have in Oxford Street and Whitechapel represents us exactly as Athens, Florence, Amiens or Wells were representative of the past. You will remember those slides of modern disorderly advertisement-plastered streets that came as shocks to most of us. I want to suggest to you that they were not mere irritating mistakes, inartistic, non-communal, but that they mean something in civilisation. That shock which came to us from the pictured thing is, unrealisedly, a shock in all our hearts as we pass down those streets. It is a killing influence that is abroad, and unless we can see our way slightly to amend it—a millionth per cent. of movement in another direction would give us hope—this thing will go on. We do not expect great transformations, but the mere recognition of the terror of these things would do something. The vast Parthenons and Cathedrals in London reared to attract shopping women, and the steel huts that will not get built in the country to hold the working man, are the external crystallisation of our age. It is not a matter of "taste," or poor "architecture"; they are only words which come between; it is a profound matter of life. The modern anarchy is a perfectly expressive style of to-day. Still, we cannot but hope—or at least act as if we hoped—that there is some mistake. Conditioned as we are by that which is all about us, we hope that our wills or our intelligence might be factors which would bring about some slow change, if we only tried.

How are we to try? If art were an outward thing, we might go on repeating the semblance of masterpieces for ever; we have forty literary men who could turn out imitation Shakespeare to perfection. I once heard Morris say, when looking at some sham antique picture, that "no doubt the trick of forgery did stimulate the English mind to its highest activities." We have twenty sculptors who could do imitation Michel Angelo, and we have at least six architects who, on paper, could do Gothic or Wren designs. But that is all no good; it is less than no good, because it is a positive betrayal. Such work, however grand and clever, is less than art, because it lacks the breath of life which is the corporate spirit, folk expression. Such grandeurs and whims are still-born. The root of all artistic principle is this: the root must be in the ground.

While entertaining such thoughts we may be likely to suppose that we are in an unpoetic and an inartistic age, and that we cannot get out of it. But I am convinced that in some degree we could help it, and that is what we want to try to get at. On such occasions as this I often wish—it is an absurd wish, I know—that we could take a vote and find that so many of us agreed to something or other as a beginning—to some simple proposition and that we could then go forward to the next point. The next point might be to say that although we inherited the notions, or the lack of notions, of the last generation, all the able and eager young men who are being indurated with what is called architectural theory shall at least hear the occasional rumour of a rational basis for their ambitions. What is this basis ? It is what we have heard to-night in the lecture. To serve, to interpret the needs and to express the community, the nation, the city, the building craft itself.

If we could point to such a solid standing ground, putting the thought of a national service of building, in place of a vague and visionary notion, it would be all to the good. I think my generation was maddened by the notion of an abstract, æsthetic architecture, the Lord High Admiral of all the Fine Arts. If we could place the rational notion that architecture is serviceable building for the community, in place of the remote consideration of abstract and absolute æsthetic notions, we might get somewhere. If we got that foundation agreed, we might go on to see how the thought of a national service of building would work out, and thus we should immediately be brought up against simple notions, like economy, efficiency, science, structure, and so on. Any one of these which really had its basis on the earth would do. Economy—which we sometimes look on as our chief enemy, standing between us and the realisation of all these visions in the air—if we could face economy for five years, that would give us a building architecture. You will remember that, near the end of the lecture to-night, we saw an astounding pile of what they call " sky-scrapers " in New York. A friend of mine has recently come back from America. He told me that, rich as they are there, they are faced with the need for great economy in carrying out these giant buildings, and have had to cut down the vulgar trimmings and all the plastering on of " style " which is a disease. The impressiveness of much that is going on in America to-day is the facing of a great need of economic production. So with the other simple notions which we can understand : efficiency, science, structure, and so on. If we faced these root things on which we stand, we should have to admit at last that there was more in building than what an old friend of mine used to call " swelldomania." We have been trained for two generations in architectural swelldomania, ideas of richness, grandeur, style, and it does not work, that is the point. If it had worked, well and bad !

I may take two illustrations from things of our own day to make my main meaning clearer ; two illustrations which I hope may show in some degree how community needs will shape the art of building to right results. The idea of a free " design " in architecture is really the betrayer. If we could get out of that idea of a free art design into the sense that all building design was rigidly conditioned, we should touch a foundational bottom. The first illustration is furnished, to my mind, by many admirable groups of small houses recently built in England, which seem to me to be the most real, human, competent things that we have done for a century. These groups of housing schemes scattered up and down the country give me real delight. They are like some of the things we have seen on the slides.

The other illustration is taken from New York buildings and is the result of their new law for high buildings. This answering to compulsion, getting rid of whim, is giving the buildings a curious sense of reality.

What I have been saying reminded me of a passage in a letter of a friend of mine who had been let out of an asylum ; he said : " I am interested in trying to enforce that the underlying reality is of more importance than the means of dishing it up, and that art should lead us to life." Perhaps I too, holding these views, ought to be in the same place.

Finally, just a word on what I suppose was the main message of the lecture : this need of recognising, in some way, the men who do the work. It is a tremendous problem. It is part of the problem which the Prime Minister has had in view during the last fortnight ; it is a universal, a national problem. We as architects have a duty towards the workmen. We talk about beauty, and not enough about duty in architecture. But beauty is only reached through duty. All that seeming beauty outside which is not based on duty is not beauty. Beauty is the flowering of duty. We direct the workers with so many buffers in between—buffers in both senses—surveyors, contractors and clerks of works, that we have no direct contact with them at all ; we are not allowed to have, really. It has become almost indelicate of an architect to speak to a workman on the job. He can smile at him round the corner, but even that is irregular. The corporate spirit in architecture must embrace craftsmen, and we must get back to the idea that building is more their concern than ours, by about 100 to 1.

Mr. GILBERT BAYES (Master of the Art Workers' Guild) : It gives me the very greatest pleasure to second this vote of thanks.

I, too, have got some notes on Mr. Hiorns' lecture, and I will start by disagreeing with him on one point—

perhaps the only one on which I shall do so. In describing classic times, he speaks of work which was to gratify no primitive taste. I am a little inclined to feel we have forgotten primitive tastes too much in the past. As a sculptor, I believe there are certain primitive grounds on which you can speak to the man who has had no art training ; certain things which will appeal to him, and which, if you give him in your art, he will give you *carte blanche* to " Do whatever you like in your own particular craft afterwards." We have too long produced things which he could not understand. We must speak to him in a more simple way, but certainly not in a make-believe primitive style such as is dished up to us to-day. There are certain fundamental things which a perfectly healthy, simple-minded person can understand, and which he has every right to expect us to give him in and on the buildings we erect in the streets, which he probably has to pass more often than we have.

(Mr. HIORNS : That was not my view ; it was part of the quotation.)

I agree, but I mention it because we need to come back to simple straightforward stuff. " Their works were the nation's boast," that is what we should aim at, and the simplifying of private life. Surely these two things together appeal to us very much to-day, with all our labour and domestic troubles.

Mr. Hiorns tells us " that Phidias, Ictinus, and others produced their divine creations to serve the esoteric fancies of no select and lordly tribe of connoisseurs ; they were the nation's Ministers." That is a healthy theory.

If we could put forth our energies to the making of public works which are worth having, we might get somewhere. We, as Londoners, should take a pride in making London the finest city that was ever built. We should make it our business to take on the duty which lies close to our hands. We look too far afield and we do not get anywhere ; if we looked at things close to our doors we might do something. I feel increasingly, as I see more and more of life, that with every artist, painter, sculptor, or whoever he may be, the greater percentage of his work should not be done for exhibitions, but should be done for a specific purpose and place. If we could only get back to that I think we should get rid of so-called modern art, where each thing is virtually a " stunt " to be talked about. If we could put our work to definite and reasonable use we should very soon become a healthy body of artists.

There is to-day a lack of co-ordination and realisation. The tendency is to think of ourselves as individualists ; it is so seldom you can get a man to realise that he is only part of an architectural whole, possibly a very small part. In many cases it is not his business to strike the main note. He must have sufficient pride to do his best ; but he must also have sufficient humility to be content to strike a quiet note in the orchestration.

Thanks are due to our lecturer for saying that he feels that modern work can hold its own, from the point of view of craftsmanship, with almost any other period, because I feel we are inclined to make rather too much of the past ; and on looking round, one does find some extraordinarily good work done to-day, work which is not getting full credit.

I also welcome heartily his comments upon colour. As things are at present, and until we get a much more active Smoke Abatement Society, we shall not get a white city, but we might be a gay and coloured city.

Mr. HALSEY RICARDO [*F.*] : I had no intention of entering into the discussion when I came here to-night ; but I think we might take a parallel from other manufactures. In mediæval times there was co-operation of the skilled with the unskilled, all working more or less in one place together, seeing what each other was doing and discussing and talking matters over. We cannot reproduce that, but a parallel might be followed if we consider the construction of a great field gun. In the construction of one of those implements there is tremendous enthusiasm and excitement. There is the casting of the gun, the shrinking of the jackets, the boring, all done with intense enthusiasm and accuracy, because failure to the extent of a ten-thousandth part of an inch means that the gun is practically no good. There is then the carriage to be made and the contrivances for the sighting, elevation and depression of the gun, in which everybody is concerned. The man who works at the lathe knows quite well that all depends on him as well as on everybody else concerned in the matter, and that they are all working towards the common end. You get a grouped production which we might imitate in architecture, and so enlist the sympathy of everybody concerned in the work. I grant that we cannot get all the trades under one roof or in one courtyard to discuss and talk about the structure, but still there might be great help if in the stonemasons' yard there were put upon their wall the elevations of the building as it is to be. Then each man can see where his stone on which he is working is going to be placed, and it gives him an interest in the matter, and he will in that way feel that he is giving some character to the work. The same can be done in the carpenter's shop. The carpenter could have, besides his working details, a picture of the building as it will be, so that when he comes to the treatment of the joists, etc., his interest is aroused, and he will derive an interest in the work as a whole. It would be of help if we could get individuality in our buildings, for it would lead to much good afterwards.

I discuss the case of the gun because, as Mr. Hiorns and Professor Lethaby have said, it is based on a thorough scientific knowledge of the materials that are used. If the gun is no good for a target eight miles away it is of no use at all. Though the gun is a destructive weapon—and so the opposite of architecture—there is still that feeling that everybody's work is a necessary contribution to the perfection of the whole, and that everything must be done with the nicest accuracy. Therefore I think that is a useful parallel to what we might have in our building work.

Mr. LAURENCE TURNER: On going through the City one could not help noticing, in the buildings one passed, how each was a separate unit and bore no relation to those on either side of it. There was, however, one building which was designed to carry through the horizontal lines of the buildings on either side. The street in that particular part gained enormously by carrying on the architectural lines. I think that what we have been talking about to-night turns upon one of our chief Commandments, that of our duty towards our neighbour. When an architect designs a building and the existing near buildings have a cornice not of the same height but lower down, it is most unneighbourly to sheer off that cornice and leave it truncated. One architect allowed the overhanging cornice to sail on to his building, and it did not detract from its beauty.

Our lecturer referred to stone carving, and quoted that many buildings would have been better if they were shorn of their carvings, and also remarked that craftsmen should not be so insubordinate. Probably the ordinary public might consider that the stone carver was the most insubordinate person of all. As a matter of fact he is one of the most subordinate, because he always obeys the architect's orders, and it is the architect who is to blame for any excess of ornament or ornament in the wrong place. I think the amount of carving on most buildings is not in excess to-day, in fact there is very little of it. There is a tendency, and a right one, to put carving in definite places where it can be treated as a sort of jewel, great care being taken over design and relief so as to make the piece of carving the fulfilment of the object which the architect has in view.

Mr. JASPER SALWEY [*A.*]: There is one aspect of the matter which might embody the realisation of this corporate spirit which we desire. I have noticed that when a description appears in the ordinary daily paper of some of the buildings which have been erected lately, or those which are about to be erected, it has evidently not been edited by an architect. It is a very rough-and-ready description, and much of it is very inaccurate. I think we might do much if more interesting accounts of these buildings could be published in the daily Press. Good articles are written about them in the technical journals, but, to stimulate the interest of the public, good articles should appear in the daily papers. If we could arouse a vital interest in architecture in that way, we might be able to draw back into the fields of architecture some of the men who are the descendants of the great craftsmen of the past. But their sons have been diverted into other fields, such as engineering, where their interest has been stimulated by the articles which have appeared in the papers.

Mr. A. TRYSTAN EDWARDS [*A.*]: It has occurred to me that one of the questions which we ought to ask ourselves is, how the architectural profession itself can aid the creation of this corporate spirit? It has been assumed in some of the remarks which have been made that it is the commercial spirit which has caused this lack of communal building. But it seems to me that one reason is to be found in the system of draughtsmanship, by which it is the common practice to design a building which has as its entire visible boundary the four sides of the drawing-board. That is one of the reasons why the true Georgian builder was better than many of the architects to-day: it is due to the fact that when he had to design a new building he would go to the place where it was to be, and see how his proposed design would look juxtaposed to the buildings on each side of it; and I should be inclined to say that there are two things we chiefly need, two things which the architectural profession can itself supply. In the first instance I feel it ought to be a fixed rule that every design of a new building should have, on the same paper on which it is drawn, a sketch of the buildings on each side of it. Another practice, really a social matter, which might aid the communal spirit, is that before a design is executed it might be extremely useful if a copy of it were handed to some of the neighbouring building owners, so that they might possibly express their dissatisfaction with it before the damage is done.

The CHAIRMAN: I have great pleasure in putting to you the vote of thanks which has been duly proposed and seconded.

Carried by acclamation.

Mr. HIORNS, in reply, after thanking the various speakers, said: I rather feel it was impertinent of me, when there are so many masters of the art of architecture and masters of sculpture and of painting and the other arts associated with architecture here who would deal with the matter so much better than I can, to have attempted to place these points before you. I am very anxious indeed, as we all are, that we should realise, perhaps more than we do, how much

we depend on the corporate spirit if we are to do anything really good in architecture. We depend very much on an intelligent interest on the part of the public, and certainly we depend a very great deal on proper fellowship and good feeling between all those who are concerned in the production of a building, not only architects, but painters and sculptors and art workers generally. It is very desirable, and it will be very helpful, if, in the course of time, we can foster the co-operative spirit rather more definitely between all who are concerned with the great art of building.

The following contribution to the discussion has been received from Mr. H. B. CRESWELL [*F.*] :—
I never in my life experienced such an æsthetic shock as that inflicted on us by Mr. Hiorns when, after we had been exalted in meditative bliss by visions of the glories of classic and mediæval architecture, the lantern flashed a view of the heart of a great modern city—the point of collision of Oxford Street with Tottenham Court Road, London, England, A.D. 1925. If Mr. Hiorns had made the physical sensation of closing pores and retracting blood-vessels which marked this revulsion of spirit, the text of his remarks, his leading point would have got home even more forcibly than it did. The dreadful contrast is no matter of ugliness and beauty; good architecture and bad; intellectual eminence and mental squalor: the uneasy giggle of laughter which sounded through the room when the slide appeared, disguised, as I believe, an inclination to weep at the degradation of our twentieth century souls. We cannot dissociate ourselves from responsibility for a system with which we gladly and wholeheartedly identify ourselves and in which we contentedly disport, fatten, and prosper. Do we lead in the reactionary movement? No, we do not. We acquiesce in what profits us and rub ourselves like purring cats against the legs of the accepted gods. If we applaud Mr. Hiorns, yet we also applaud those who tell us that architects ought to advertise; that education, other than specialised training directed to money-getting, is waste; that the special province of architecture is to advertise shopkeepers. None of us agrees with these rubbishy conceptions, I imagine, except in cynical affectation, but we entertain them and flatter the sources from which they flow rather than dare for a moment to forget which side our bread is buttered.

The London Society

The Earl of Crawford and Balcarres presided at the 13th annual meeting of the London Society, which was held in the Royal Academy on 19 March. About 250 members were present. Before moving the adoption of the report and balance sheet, Lord Crawford referred in sympathetic terms to Sir Aston Webb's illness and hoped he might soon be able to attend the meetings again. He also spoke of the grave condition (as it then was—the afternoon before his death) of the Marquess Curzon, who had been a Vice-President of the Society since its inception in 1912, and whose stirring address at the first annual meeting helped to launch the Society on its successful career.

Lord Crawford congratulated the Council and members on the steady progress made during 1924. He referred to the fact that the Society was still exploring the possibilities of extending its work through the affiliation of societies interested in London history and topography. On the subject of Waterloo Bridge he said he thought the decision to sweep away what is considered "the finest bridge in the British Empire" had been reached with undue haste. Regarding the preservation of St. Paul's Cathedral, he was glad to see there was no diversity of view; the only question under discussion was the technical means of strengthening the piers supporting the dome. Sir Henry New, honorary treasurer, in seconding the adoption of the Report, spoke of the satisfactory financial position of the Society, which was steadily increasing not only its subscribing membership but also its life membership; and as according to the constitution of the Society, the fees of life members had to be invested, the invested funds of the Society were steadily accumulating.

Dr. Graham Little, M.P., moved the re-election of Council and officers. The motion was seconded by Sir James Crichton-Browne, in whose speech a new and delightful version of the aim of the Society was given. He considered that the Society was seeking to kindle in Londoners a deep and enduring attachment to their City, something akin to the sentiment of the ancient Jews toward Jerusalem—"If I forget thee, O Gog and Magog, let my right hand forget its cunning!" Miss M. M. Jeffery proposed a vote of thanks to the Academy for allowing the meeting to be held there, a privilege which the Society much appreciated. Mr. Carmichael Thomas, Chairman of Executive, in thanking Lord Crawford for presiding, said he thought the three great aims of the Society which were outlined in the motto: "To protect the Ancient; to seek the Beautiful; to consider the Future," had been well maintained in their activities during 1924; these efforts had been chiefly concerned in the preservation of Waterloo Bridge and of the London city churches, and the endeavour to secure a new road bridge at Charing Cross.

An aerial survey of the section of London which is included in the Central London Plan is being made for the Society by Aerofilms, Ltd. It was hoped to secure these photographs during last summer, but there was no weather suitable for obtaining the photographs, which have to be taken at an altitude of 5,000 feet. The Society has now completed its User Zoning Maps for the whole of the boroughs north of the Thames, and these were exhibited at the annual meeting.

Amongst the interesting visits made by the members during the year were the following :—Headquarters of the Honourable Artillery Company ; the Admiralty ; the Guildhall, its Museum and Art Galleries ; the Royal Mint ; the Bank of England, and Cadby Hall.

Legal

6 *Gray's Inn Place, Gray's Inn, London, W.C.*1.
31 *March* 1925.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—An interesting case arising out of the proper interpretations of arbitration clauses in the Institute form of contract was heard in the Court of Appeal a few weeks ago and I am indebted to " The Weekly Notes " for the report which I venture to think will interest members.—Yours truly,

W. E. WATSON [*F.*].

COURT OF APPEAL.

Smith *v.* Martin and another. February 25. Building Contract, Form of. Form of conditions. Issued by R.I.B.A.

Appeal from Lush, J.

By a building contract dated 24 January 1924, and made between W. A. Martin and D. Ospalak the employers, and A. P. Smith the contractor, it was agreed that the contractor should erect for the employers 36 houses at Alperton for the sum of £690 per house.

The conditions of the contract were those in the form in general use issued by the R.I.B.A.

By Condition 31 : " Should the employers not pay the contractor any sum certified by the architect " within the time specified in the contract, " the contractor shall give written notice to the employers of the non-payment, and should the employers not pay any such sum within the period of seven days from the date of delivery of such notice . . . the contractor shall be at liberty to determine the contract." And by Condition 32 : " Provided always that in case any dispute or difference shall arise between the employers or the architect on his behalf and the contractor either during the progress of the works or after the determination, abandonment or breach of the contract as to the construction of the contract, or as to any matter or thing arising under the contract," except as to matters therein specified, such dispute or difference shall be referred to arbitration, but " such reference . . . shall not be opened until after the completion or alleged completion of the works," except by the written consent of both parties.

The contractor commenced the work, and in the months of April and May the architect complained that certain of the works done by the contractor were defective and gave him notice requiring him to rectify it. On 10 May the architect gave the contractor a certificate for £600, at the same time specifying that the certificate was conditional for its efficacy upon previous rectification of the defective work. The employers, alleging that the contractor had neglected to rectify the defective work, refused to pay the amount of the certificate. The contractor gave the employers notice requiring them to pay the money in accordance with the terms of Condition No. 31, and on the employers failing to comply with that notice refused to do any more work under the contract and determined the contract.

The contractor on 1 August procured an arbitrator to be appointed in the manner provided in Condition 32, and the arbitration was commenced on 27 October.

On 12 December the arbitrator made his award in favour of the contractor for £1,156 11s. 6d.

The employers refused to pay the amount of the award on the ground that the arbitrator had no jurisdiction, the arbitration proceedings having been commenced before the completion of the works. On the application of the contractor the Master at Chambers made an order for the enforcement of the award under Section 12 of the Arbitration Act, 1889, and in appeal Lush, J., affirmed the Master's order.

The employers appealed.

Croom-Johnson for the appellants ; R. Fortune for the respondent.

It was contended, on behalf of the respondent, that by the lawful determination of the contract by the contractor under Condition 31, upon the default of the employers in paying the amount of the architect's certificate, " the works " were completed so far as he was under any obligation to carry them out, and that consequently the arbitrator had jurisdiction. The right of resorting to arbitration would be illusory if it was to be suspended until the employers chose to get the whole of the works contracted for completed by another contractor.

The Court (Bankes and Atkin, L.JJ.) held that the words " completion of the works " in Condition 32 meant the completion of the whole works contemplated by the contract and allowed the appeal. The deprivation of the right of going to arbitration did not leave the contractor without remedy ; he would be remitted to his remedy by action for work done and materials provided.

Appeal allowed.

Solicitors for appellants : W. J. Lake and Son.

Solicitors for respondent : Simon Haynes, Barlas and Ireland.

Obituary

MAJOR WM. BAKEWELL [*F.*].

Major Bakewell, who died recently at St. Margaret's Bay at the age of 86, was born at Hampstead on 21 December 1838. He carried on for many years an extensive practice at Leeds, where he designed numerous commercial and bank premises. Amongst the public buildings he designed were the Wakefield Hospital, the Leeds Coliseum, the Ilkley Town Hall, the Athenæum Buildings, Leeds, the City Square improvements, and the Pearl Assurance Building. Major Bakewell was articled for five years to the late Mr. H. A. Darbishire and entered the offices of Sir Charles Barry, architect to the Houses of Parliament. He was elected a Fellow of the Royal Institute in 1892.

JORDAN GREEN [*A.*].

Mr. Green, who died on 9 December, at Allenhurst, New Jersey, U.S.A., aged 46, was born at Birmingham, where he received his early education. As a young man he studied in New York, and finally settled in practice at Newark, New Jersey. He was a member of the American Institute of Architects and of the New Jersey Chapter of Architects. His most recent building was the Newark Athletic Club building.

Allied Societies

ABERDEEN SOCIETY OF ARCHITECTS.

(ABERDEEN CHAPTER OF THE INCORPORATION OF ARCHITECTS IN SCOTLAND.)

ABSTRACT FROM THE ANNUAL REPORT.

Report by the Council to the Annual General Meeting to be held on 3 March 1925.

Meetings.—Since last annual meeting three meetings of Council have been held.

Incorporation of Architects in Scotland.—The Kalendar of the Incorporation for 1924-25 was duly issued to Fellows of the Chapter as hitherto.

Mr. Bennett Mitchell has been appointed and agreed to act as Auditor of professional accounts in the Chapter Territory.

Drawings sent in by competitors in connection with the Incorporation's prizes were on exhibition in Aberdeen in the Art Gallery, facilities having been kindly given by the Director and Committee of the Gallery.

R.I.B.A.—The Council has continued to keep in touch with the Royal Institute. Communications have been received from the Institute and considered by the Council on many matters, including prizes and studentships, architectural education, R.I.B.A. examinations, scale of charges, competitions and wages slips on tenders.

As in former years a selection of the R.I.B.A. prize drawings was exhibited, facilities for the Exhibition having again been kindly afforded by the Committee and Director of the Art Gallery. It is proposed to hold a similar exhibition in 1925.

Competitions.—The Society was asked by the Architects' and Surveyors' Assistants' Professional Organisation to support a protest by that body against the limitation of the competition for a new advanced school at Dundee to architects carrying on business on their own account; but the Council, while sympathising with the protest felt that Aberdeen Chapter had no standing in the matter and Dundee Chapter would be a more appropriate one to assist.

Apprentices.—The Council recommended that members of the Chapter should make it a condition of engaging any future apprentice that such apprentice should become a member of the appropriate section of the Chapter of the Incorporation of Architects in Scotland and that the members should pay the entrance fees, dues and annual subscriptions of the Incorporation in respect of such apprentices.

SOUTH WALES INSTITUTE OF ARCHITECTS.

The Annual General Meeting of the South Wales Institute of Architects was held at the Institute Rooms, No. 6, High Street, Cardiff, on Thursday evening, 26 March, when Mr. C. F. Ward, F.R.I.B.A., Borough Architect of Newport, Mon., was elected President for 1925–26.

Mr. Ward, in accepting office, referred to the indebtedness of the South Wales Institute of Architects to the retiring President, who during his three years' term of office, had expended valuable time and had carried out exceptionally useful work when attending the meetings of the R.I.B.A. Council in London.

The retiring President, Mr. Percy Thomas, O.B.E., F.R.I.B.A., in the course of his remarks referred to the greatly strengthened position of the South Wales Institute of recent years, owing largely to the fact that all the leading architects in the South Wales area were now enrolled as members.

He also referred to the recent absorption of the Society of Architects by the Royal Institute of British Architects, and to the effect this would have in strengthening the profession throughout the country.

In conclusion he pointed out the necessity for the continued interest of all members in the affairs of the Institute.

The Honorary Treasurer, Mr. H. Teather, F.R.I.B.A., in his report pointed out the strong financial position of the South Wales Institute, and referred to the proposed intentions of the Council to use the funds in hand for the assistance of the three Branches of the Institute in South Wales, so that the work of the Branches would be greatly facilitated.

The Council elected is as follows :—

President.—C. F. Ward, F.R.I.B.A.

Vice-Presidents.—Percy Thomas, O.B.E., F.R.I.B.A., C. S. Thomas, F.R.I.B.A.

Hon. Treasurer.—H. Teather, F.R.I.B.A.

Hon. Auditor.—E. H. Fawckner, F.R.I.B.A.

Hon. Librarian.—C. H. Kempthorne, Licentiate R.I.B.A.

Members.—CENTRAL BRANCH: A. C. Edwards, Licentiate R.I.B.A., W. S. Purchon, M.A., A.R.I.B.A., T. Alwyn Lloyd, F.R.I.B.A., J. Williamson, A.R.I.B.A., J. B. Wride, F. H. Heaven, A.R.I.B.A., G. H. Griffiths, R. H. Winder, M.A., A.R.I.B.A., J. A. Hallam. WESTERN BRANCH: J. Herbert Jones, F.R.I.B.A., H. C. Portsmouth, F.R.I.B.A., Edwin Smith, A.R.I.B.A., Sidney R. Crocker, Licentiate R.I.B.A., G. R. H. Rogers, O. S. Portsmouth, A.R.I.B.A. EASTERN BRANCH: R. Fisher, H. Jones, Licentiate R.I.B.A., W. Rosser, F.R.I.B.A., F. Swash, F.R.I.B.A.

Associates' Representatives.—T. E. Llewellyn, R. E. M. Coombes, Central Branch; George L. Crocker, Western Branch; J. E. Lenton, Eastern Branch.

THE BERKS, BUCKS AND OXON ARCHITECTURAL ASSOCIATION

COUNCIL MEETING HELD 20 MARCH, 1925.

Work by Public Officials.—The attention of the Council was drawn to the appointment of a Sanitary Inspector as Architect to a Council Housing Scheme, and it was resolved to send particulars to the Allied Societies Conference and Ministry of Health.

Assistants' Salaries.—The Council resolved that "It was undesirable and impracticable to endeavour to fix minimum salaries for assistants in the provinces."

New President.—Mr. H. S. Rogers, M.A., F.S.A., F.R.I.B.A., was nominated for election as President at the Annual General Meeting.

THE CITY CHURCHES.

On the recommendation of the Art Standing Committee it was decided to take special steps to direct public attention to the threat to the City Churches.

THE BOMBAY ARCHITECTURAL ASSOCIATION.

The Bombay Architectural Association was admitted as an Allied Society of the R.I.B.A. under the provisions of Bye-laws 81 to 85.

LONDON STREET ARCHITECTURE.

Award for 1924.

The Jury appointed by the Royal Institute of British Architects to award a medal to the Architect who has designed the best street frontage completed during the year 1924 within a radius of four miles from Charing Cross has just completed its task.

After careful examination of drawings and photographs of all the buildings which were nominated for the honour, the Jury has given its award in favour of :

The Auctioneers' and Estate Agents' Institute, 29 Lincoln's Inn Fields, W.C.

designed by Messrs. Greenaway and Newberry, FF.R.I.B.A., of Parliament Mansions, Victoria Street, S.W.1.

The jury consists of :

The Earl of Crawford and Balcarres, K.T., P.C., Hon. F.R.I.B.A. (Chairman).
Mr. J. Alfred Gotch, F.S.A., President of the Royal Institute of British Architects.
Sir Edwin Lutyens, R.A., F.R.I.B.A.
Mr. E. Guy Dawber, F.S.A., F.R.I.B.A.
Mr. Walter Tapper, F.R.I.B.A.

R.I.B.A. FINAL EXAMINATION : PROBLEMS IN DESIGN.

Alternative Subject to No. LXXXIV (A).

(A Design for a Garage.)

The attention of candidates is drawn to the following alternative subject No. LXXXIV (A) (2) :—

A local authority wish to carry out a housing scheme on a site of 12½ acres having a frontage of 600 feet to a main road on the S.E. side of the site, leading out of the town. The road has a slight curve giving a concave frontage, and the land rises from the road at an even slope of about 1 in 25.

Sites are to be arranged for 100 cottages, 8 shops, a small institute and a church. A recreation ground of appropriate size should be provided.

The site may be developed with light roads not providing for any through traffic to the land beyond.

Drawings required.—A block plan to a scale of $\frac{1}{500}$ showing the intended position of all buildings, roads, recreation grounds, etc.

Complete plans, elevations, sections, of one of the groups of cottages, shown on the block plan, containing not less than 3 or not more than 4 dwellings, to ⅛ inch scale.

All the dwellings to be of such sizes and accommodation as would be eligible for the grants under the 1924 Housing Act.

Plans of the ground and first floors only of three other types of cottage, indicating the aspects for which they are intended to ⅛ inch scale.

The Registration Committee.

Mr. C. McArthur Butler was appointed Secretary of the Registration Committee.

Reinstatement.

Mr. Dodgshun was reinstated as a Licentiate.

Notice to Members

Wages Slips on Tenders.

In 1924 the National Federation of Building Trades Employers found it necessary, owing to the conditions in the Building Industry at the time, to instruct their members to affix to all Tenders a Slip providing for adjustments to be made in the event of a rise or fall in wages. After conferences had been held, the R.I.B.A. agreed to the proposal subject to certain conditions which all members of both bodies were recommended to accept.

The arrangement made in 1924 expired on 25th March 1925. The position has again been reviewed in conference with the National Federation of Building Trades Employers, as a result of which it has been agreed by the Executives of the R.I.B.A. and the National Federation to continue the arrangement made in 1924 for a further 12 months until 25th March 1926.

Members of the R.I.B.A. are therefore requested to note, and are recommended by the Council of the Institute to carry out, the conditions attaching to the arrangement which has been reached having regard to the conditions in the Industry at the present time and in full realisation of the fact that it is undesirable to perpetuate it. The conditions are as follows :—

(*a*) That if any Slips are attached to tenders they should provide only for actual wage increases or decreases to men employed by the contractors or sub-contractors at the agreed standard rates and paid by the hour, and not for the inclusion of overhead charges or profit, upon such increases as well.

(*b*) That the Slips shall not be affixed to tenders up to £2,500 provided that in the case of tenders below £2,500 a provisional sum shall be included equal to 2½ per cent. on the total tender out of which the above increases to men paid by the hour are to be met, but such provisional sum in any event shall not be exceeded.

ARCHITECTS' BENEVOLENT SOCIETY.

Scheme of Insurance.

In view of the interest shown by architects in the Scheme of Insurance, the Council of the Architects' Benevolent Society have recently secured the help of an advisory committee of insurance specialists.

The Architects' Benevolent Society is now in a position to answer enquiries on every class of insurance business, whether concerning existing or contemplated policies, and is ready to give considered advice on all such questions.

Notices

THE TWELFTH GENERAL MEETING.

The Twelfth General Meeting (Ordinary) of the Session 1924-25 will be held on Monday, 20 April 1925, at 8 p.m., for the following purposes :—

To read the Minutes of the General Meeting (Ordinary) held on 30 March 1925 ; formally to admit members attending for the first time since their election or transfer.

To read the following paper, " Natural and Artificial Lighting," by Mr. Percy J. Waldram [*L.*].

NOTICES (continued)

ARCHITECTURE AND THE CRAFTS.

The remaining lectures of the series are as follows :—

Tuesday, 21 April, at 5 p.m., " Metal Work," by Mr. R. Ll. Rathbone.

Thursday, 30 April, at 5 p.m., " Mural Painting," by Mr. John D. Batten.

The lectures are open free to the general public, and in certain cases will be associated with exhibitions of examples of the crafts which form the subjects of the lectures.

VISIT TO ADELAIDE HOUSE.

A visit has been arranged by the Art Standing Committee to take place on Saturday afternoon, 18 April, to Adelaide House, London Bridge (Sir John J. Burnet and Partners, Architects). Members desirous of taking part are requested to make early application to the Secretary R.I.B.A., 9 Conduit Street, London, W.1.

THE ANNUAL DINNER 1925.

It has been decided by the Council that the Annual Dinner of 1925 is to be held on Tuesday, 12 May, at 6.30 for 7 p.m., at the Trocadero Restaurant, Piccadilly Circus, W.1. A number of distinguished guests are expected, and it is hoped that a large number of members will be able to be present.

The price of tickets is £1 11s. 6d. for Members and for Members' guests (inclusive of wines and cigars). It would be a convenience if Members would kindly give the names of their guests when applying for tickets. All applications, with cheques, should be addressed to the Secretary.

Early application would greatly facilitate the arrangements ; and if Members would send an intimation to the Secretary some days beforehand as to the friends near whom they desire to sit, every endeavour will be made, when arranging the plan of the tables, to meet their wishes as far as possible.

THE CITY CHURCHES.

It is proposed to arrange an Exhibition of Drawings and photographs of the Churches in the City of London during the week beginning 11 May 1925, in the R.I.B.A. Galleries.

The Committee in charge of the arrangements would be glad to receive from Members the loan of any drawings suitable for exhibition. Drawings so lent will be insured and returned, carriage paid.

NOTICE TO LICENTIATES.

The programme of the Examination of Licentiates desiring to qualify for candidature as Fellows is ready and may be obtained on application to the Secretary R.I.B.A., 9 Conduit Street, W.1. The first Examination will take place on 13, 14, 15 and 16 May 1925, and the application form, accompanied by the necessary Drawings and Photographs, must be sent in on or before Saturday, 25 April 1925.

EXHIBITION OF SKETCHES BY MR. T. RAFFLES DAVISON, HON. A.R.I.B.A.

Pen, pencil and pastel sketches from the countryside by Mr. T. Raffles Davison, Hon. A.R.I.B.A., will be exhibited in the galleries of the Royal Institute of British Architects, 9 Conduit Street, London, W.1, from 16 April to 28 April. Altogether about one thousand sketches will be shown, forming a small part of the artist's output during some forty years. They illustrate a great variety of subjects including studies of pastoral landscape. The artist's chief wish in the exhibition is that they may convey some share of that pleasure and interest to others which he has enjoyed in their production. The exhibition will be open free to the public between the hours of 10 a.m. and 8 p.m. (Saturdays 5 p.m.).

THE NEW CHARTER AND BYELAWS : AMENDMENT TO BYELAW 29.

By order of the Privy Council dated 24 March 1925 the addition of the following words to Byelaw 29 (Constitution of the Council) was approved :—

" (*g*) The Chairman of the Board of Architectural Education being a Fellow of the Royal Institute."

Election of Members

8 JUNE 1925.

The following applications for election have been received. Notice of any objection or other communication respecting the candidates must be sent to the Secretary for submission to the Council prior to Monday, 4 May 1925 :—

AS FELLOWS (14).

ADAMS : PERCY TIDSWELL [*A.* 1909], Imperial Bank Building, Prince Street, Colombo, Ceylon.

BEST : HALSTEAD [*A.* 1925], St. John's Chambers, 87 Church Street, Blackpool ; 46 Read's Avenue, Blackpool.

DUNN : HERBERT HENRY [*A.* 1896], County Hall, Cambridge ; The Woodlands, Great Shelford, Cambs.

GLENCROSS : LESLIE HAROLD [*A.* 1919], 2 John Street, Bedford Row, W.C. ; " Bostraze," Hill Close, Harrow-on-the-Hill.

GUTHRIE : LEONARD ROME, M.C., M.R.I. [*A.* 1910], 37 Bruton Street, W.1 ; 3 Caithness Road, Brook Green, W.

HOBSON : CAPTAIN JOSEPH REGINALD, M.C. [*A.* 1907], Public Works Department, Southern Rhodesia ; Salisbury Club, Salisbury, Rhodesia.

HOLT : HAROLD GUY [*A.* 1908], Windsor House, 46 Victoria Street, Westminster, S.W.1 ; 9 Sutton Court, Chiswick, W.4.

SWANNELL : CHARLES MALCOLM [*A.* 1911], 1 Broad Street Buildings, Liverpool Street, E.C.2 ; 48 Alexander Park Road, Muswell Hill, N.

THOMPSON : MORRIS [*A.* 1910], Carbon Chambers, Hall Gate, Doncaster ; Bawtry Road, Doncaster.

TRENCH : GILBERT MACKENZIE, F.S.I. [*A.* 1908], Police Architect and Surveyor, New Scotland Yard, S.W.1 ; " Grassington," Foxley Lane, Purley, Surrey.

WALKER : EDWARD HOLSWORTH [*A.* 1906], Carbon Chambers, Hall Gate, Doncaster ; " Sandilands," Bessaca, near Doncaster.

WALKER : MARSHALL EYRE [*A.* 1911], 21 Suffolk Street, Pall Mall East, S.W.1 ; Updene, West Hill Road, Woking, Surrey.

WARD : BERNARD MICHAEL [*A.* 1906], 3 Lord Street, Liverpool ; 88 Upton Road, Birkenhead.

WELCH : ROLAND [*A.* 1908], 20 and 22 Maddox Street, W.1 ; 12 Constable Close, Hampstead Garden Suburb, N.W. 11.

AS ASSOCIATES (5).

ASHBURNER : EDWARD HEATHCOTT, B.Arch.Liverpool [*Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice*], 5 Fairfield Road, Stockton Heath, Warrington.

BLOODWORTH : CHARLES THOMAS, B.Arch.Liverpool [*Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice*], 138 Derby Lane, Stoneycroft, Liverpool.

JENKINS : WILLIAM VICTOR, B.Arch.Liverpool [*Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice*], 20 Manville Road, Wallasey, Cheshire.

MAW : SAMUEL HERBERT [*Final Examination*], 274 Beaver Hall Hill, Montreal, Canada.

VELARDE : FRANCIS XAVIER [*Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice*], 16 Withert Avenue, Higher Bebington, Cheshire.

AS HON. ASSOCIATES (4).

DEARMER : THE REV. PERCY, M.A., D.D., Professor of Ecclesiastical Art and Lecturer in Art, King's College, University of London ; 9 Embankment Gardens, Chelsea, S.W.3.

EARLE : SIR LIONEL, K.C.B., K.C.V.O., C.M.G., J.P., 14 Sloane Gardens, S.W.

SHAW : EVELYN CAMPBELL, M.V.O., 39 Gilston Road, S.W.10.

TURNER : LAURENCE ARTHUR, F.S.A., 56 Doughty Street, W.C.1.

Competitions

PROPOSED REBUILDING OF THE ENGLISH BAPTIST CHURCH, PONTLOTTYN.

The Competitions Committee desire to call the attention of members to the fact that the conditions of the above competition are not in accordance with the regulations of the R.I.B.A. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime Members are advised to take no part in the competition.

NATIONAL COMMEMORATIVE WAR MONUMENT.

To be erected on Connaught Place, Ottawa, Canada. Closing date for receiving designs, 11 June 1925. Assessors Henry Sproatt, LL.D., R.C.A., Herman A. MacNeil, N.A., F. J. Shepherd, M.D., C.M., LL.D. Total cost not to exceed $100,000. Apply to the Secretary, Department of Public Works, Ottawa, Canada.

PROPOSED PRESBYTERIAN CHURCH AT CHEAM, SURREY.

The Competitions Committee desire to call the attention of Members to the fact that the Conditions of the above Competition are not in accordance with the Regulations of the R.I.B.A. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime Members are advised to take no part in the Competition.

PROPOSED EXTENSION TO THE SHIREHOUSE, NORWICH.

Closing date for receiving designs 1 July 1925. Assessor, Mr. Godfrey Pinkerton, F.R.I.B.A. Premiums £150, £100, and £50. Apply to the Clerk of the County Council, Shire Hall, Norwich.

STOCKSBRIDGE PUBLIC SWIMMING BATHS COMPETITION.

Members of the Royal Institute of British Architects must not take part in the above competition because the conditions are not in accordance with the published regulations of the Royal Institute for Architectural Competitions

COALVILLE PUBLIC BATHS COMPETITION.

The President of the Royal Institute of British Architects has nominated Mr. Alfred W. S. Cross, F.R.I.B.A., as assessor in this competition.

COMPETITION FOR A HIGH BRIDGE OVER COPENHAGEN HARBOUR.

Copenhagen Municipality hereby invite participation in an International Competition in connection with a High Bridge over Copenhagen Harbour.

The Municipality have set apart a sum of 35,000 kroner to be expended in prizes. There will be three prizes, the value of which will be fixed by a Judgment Committee consisting of Members of the Council, together with technicians chosen by the Municipality, the (Danish) Institute of Civil Engineers and the (Danish) Society of Architects. The largest prize will be at least 15,000 kroner.

Programme and particulars in Danish and English can be procured after 1 February 1925, from the City Engineer's Office, Town Hall, Copenhagen B, against a deposit of kr. 100.

The deposit is repayable after the judging, or previously if the drawings, particulars, etc., are returned in good condition. Projects to be delivered to the City Engineers Directorate, Town Hall, before mid-day, 1 September 1925.

After judgment the competing projects will be publicly exhibited at the Town Hall, Copenhagen.

LEAGUE OF NATIONS.

COMPETITION FOR THE SELECTION OF A PLAN WITH A VIEW TO THE CONSTRUCTION OF A CONFERENCE HALL FOR THE LEAGUE OF NATIONS AT GENEVA.

The League of Nations will shortly hold a competition for the selection of a plan with a view to the construction of a Conference Hall at Geneva. The competition will be open to architects who are nationals of States Members of the League of Nations.

An International Jury consisting of well-known architects will examine the plans submitted and decide their order of merit.

A sum of 100,000 Swiss francs will be placed at the disposal of the Jury to be divided among the architects submitting the best plans.

A programme of the competition will be ready in February, 1925, and will be despatched from Geneva so that Governments and competitors may receive copies at approximately the same date. Copies for distant countries will therefore be despatched first.

COMPETITIONS (continued)

The British Government will receive a certain number of free copies. These will be deposited at the Royal Institute of British Architects, and application should be made to the Secretary, R.I.B.A., 9, Conduit Street, W.1, by intending competitors.

Single copies can be procured direct from The Secretary-General of the League of Nations at Geneva, for the sum of 20 Swiss francs, payable in advance, but will not be forwarded until after the Government copies have been despatched.

On the nomination of the President of the Royal Institute, Sir John Burnet, A.R.A., has been appointed as the British representative on the Jury of assessors.

TECHNICAL COLLEGE, MIDDLESBROUGH.

The conditions of the above Competition have been submitted to the Competitions Committee of the R.I.B.A., and are found to be in accordance with the Regulations of the R.I.B.A.

THE NEW INSTITUTE FOR THE BLIND, BUENOS AIRES, ARGENTINE REPUBLIC.

An International Competition has been promoted for the Argentine Institution for the Blind, Buenos Aires, Argentine Republic.

A small number of copies of the Conditions have been deposited in the R.I.B.A. Library for the information of British Architects who may desire to compete.

A booklet containing the full text of the conditions with other information (translated from the Spanish) and a plan of the ground on which the Institution is to be erected is available for inspection at the Department of Overseas Trade (Room 42), 35 Old Queen Street, London, S.W.1.

MASONIC MEMORIAL COMPETITION.

Closing date for receiving designs, 1 May 1925. Assessors: Sir Edwin Lutyens, R.A. [*F.*] (appointed by the President); Mr. Walter Cave [*F.*], Mr. A. Burnett Brown, F.S.I.

Members' Column

DISSOLUTION OF PARTNERSHIP.

THE partnership existing between Sir Hugh Thomas and D. Frank Ingleton has been dissolved, owing to the death of the former. The practice of Thomas & Ingleton, of Victoria Place, Haverfordwest, has been acquired by D. Frank Ingleton, M.C., L.R.I.B.A., who will continue to practise at the above address in his own name. All assets and liabilities have been assumed by the said D. Frank Ingleton.

PARTNERSHIP WANTED.

WELL experienced and practised Associate with own office, now temporarily in a Government Department, would welcome any proposal to get free and going again in private practice. Capital available.—Apply Box 122, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

SECRETARY AND ACCOUNTANT RECOMMENDED.

F.R.I.B.A. strongly recommends a secretary and accountant specially trained in architect's offices who is desirous of taking a similar post.—Apply Box 2635, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

OFFICE TO LET.

UNFURNISHED office to let on second floor of new building, close to the Army & Navy Stores, Westminster, S.W. Suitable for a young architect commencing practice. Rent £52 per annum, ordinary cleaning extra.—Apply Box 2652, c/o Secretary R.I.B.A. 9 Conduit Street, W.1.

FLAT TO LET.

A.R.I.B.A. (retired) has self-contained upper part of his house to let, suitable for residence and (or) offices. Near Gipsy Hill Station, and bus routes 3A and 2. Rent, £100 per annum inclusive.—Apply Box 8225, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

FLAT WANTED.

MEMBER would be very glad to hear of small unfurnished flat with bathroom to let in Kensington or Chelsea, with possession in September.—Apply Box 2735, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

APPOINTMENT WANTED.

LICENTIATE of long experience in London available for temporary work. Working drawings of small houses, factories, banks, etc. Expert in steel construction. Qualified for district surveying.—Address Box 4211, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

AN architect and surveyor, skilled in all branches of his profession, is anxious to obtain an appointment. Highest references.—Apply Box 9254, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

Minutes XI

At the Eleventh General Meeting (Ordinary) of the Session 1924–1925 held on Monday, 30 March 1925, at 8 p.m.

Mr. Edward P. Warren in the chair.

The attendance book was signed by 15 Fellows (including 2 Members of Council), 25 Associates (including 3 Members of Council), 9 Licentiates and a large number of visitors.

The Minutes of the Meeting held on 16 March 1925 having been taken as read, were confirmed and signed by the Chairman.

The Hon. Secretary announced the decease of the following Members :—

The Most Hon. the Marquess Curzon of Kedleston, K.G. Elected Hon. Fellow 1904.

Lord Sheffield, elected Hon. Associate 1904.

William Ashford Hodges, elected Associate 1907.

Hubert Stanley Saunders, elected Associate 1881.

and it was *Resolved* that the regrets of the Royal Institute for their loss be entered on the Minutes and that a message of sympathy and condolence be conveyed to their relatives.

The following members attending for the first time since their election or transfer were formally admitted by the Chairman :—

E. Stone Collins [*F.*].
J. Herbert Pearson [*F.*].
G. R. Barnsley [*A.*].
W. Langcake [*A.*].
Val Bonella [*L.*].
John C. F. James [*L.*].
W. G. Farmer [*L.*].
F. Edward Jones [*L.*].
T. W. Moore [*L.*].
Arthur W. Tribe [*L.*].

Mr. A. Beresford Pite having read a paper on "The Architectural Treatment of Ferro-Concrete" and illustrated it by lantern slides, a discussion ensued, and on the motion of Sir E. Owen Williams, seconded by Professor William Rothenstein, Principal of the Royal College of Art, a vote of thanks was passed to Mr. Pite by acclamation and was briefly responded to.

The Meeting closed at 10.15 p.m.

Members sending remittances by postal order for subscriptions or Institute publications are warned of the necessity of complying with Post Office Regulations with regard to this method of payment. Postal orders should be made payable to the Secretary R.I.B.A., and crossed.

R.I.B.A. JOURNAL.

***Dates of Publication.*—1924: 8th, 22nd November; 6th, 20th December. 1925: 10th, 24th January; 7th, 21st February; 7th, 21st March; 4th, 25th April; 9th, 23rd May; 13th, 27th June; 18th July; 15th August; 19th September; 17th October.**

VOL. XXXII. No. 12 25 APRIL 1925

Report of the Council for the Official Year 1924-1925

SINCE the publication of the last Annual Report the Council have held 20 meetings.

The following Boards and Committees appointed by the Council have met and reported from time to time on the matters referred to them :—

Annual Dinner Committee.
Architects' and Builders' Consultation Board.
Board of Architectural Education.
Charter and Bye-laws Committee.
Competitions Committee.
Conditions of Contract Committee.
Finance and House Committee.
Housing Committee.
Housing Fees Committee.
Joint Committee on Reinforced Concrete.
London Building Acts Committee.
Joint Committee on the Overcrowding of the Architectural Profession.
Premises Committee.
Registration Committee.
R.I.B.A. Exhibition Joint Committee.
Royal Gold Medal Committee.
Selection and General Purposes Committee.
Sessional Papers Committee.
Shortage of Skilled Building Labour Committee.
Thames Bridges Conference.
Town Planning Committee.

Particulars of the work of these Boards and Committees, so far as they are available for publication, are embodied in this Report.

Past-Presidents. It is with the deepest regret that the Council have to record the loss during the past year of no fewer than three distinguished Past-Presidents—Sir William Emerson (President 1899–1902), Mr. Thomas Edward Collcutt (President 1906–1908), and Mr. Paul Waterhouse (President 1921–1923). The two first named died at a great age, having for some time retired from active practice. But the death of Mr. Paul Waterhouse, in the prime of life and while still devoting his strength and his brilliant abilities to the service of the Royal Institute and of the profession generally, was an irremediable disaster. The work which he did for the profession, both as Chairman of the Board of Architectural Education and during his distinguished tenure of the Presidency will never be forgotten by the Royal Institute.

Obituary. The losses by death have been as follows :—

HONORARY FELLOW.

The Most Hon. Marquess Curzon of Kedleston, K.G., etc.

HONORARY ASSOCIATES.

Pomeroy : Frederick William, A.R.A. Sargent : John Singer, R.A. Lord Sheffield.

HONORARY CORRESPONDING MEMBERS.

Ferree : Barr (America). Giampietri : Cavaliere Settimio Fedele Gerardo (Italy).
Goodhue : Bertram Grosvenor (America).

FELLOWS.

Emerson : Sir William.
Hattrell : Walter Herbert.
McCowat : Robert Lockhart.
Perkin : Henry.
Pywell : William.
Robertson : David.
Russell : Robert Fabian.
Salmon : James.
Sheppard : Arthur William.
Slater : John.
Statham : Henry Heathcote.
Waterhouse : Paul.
Wilson : Cecil Locke.

RETIRED FELLOWS.

Bakewell : William.
Collcutt : Thomas Edward.
Dennison : John William.
Harris : E. Swinfen.
Seward : Edwin.

ASSOCIATES.

Barry : William Ernest.
Belcher : Arthur Herbert.
Brewerton : Frank Asquith.
Capper : Major Stewart Henbest.
Cockrill : John William.
Cressall : Walter Thomas.
Gammell : Kensington.
Green : Jordan.
Harris : Francis Eldred Lodge.
Harrisson : John Anstice.
Hodges : William Ashford.
Mather : Robert Brodie.
Moore : Frederick Holyoake (Resigned 1921).
Moss : Harry.
Northcote : Arthur Edward.
Peters : Thomas James.
Philp : Arthur Thomas.
Pinches : Frederick.
Protheroe : Frank.
Robson : Bernard.
Rouse : Edward Henry.
Saunders : Herbert Stanley.
Smith : Hubert Niemann.

LICENTIATES.

Barrowcliff : George Harry.
Bates : Francis Ross.
Bevan : Thomas Morgan.
Blythe : Samuel Osborne.
Bryce : George Ronald.
Dyball : Harvey.
Ellershaw : T.
Goodwin : Sidney Hall.
Lee : William Winder.
Lockhart : John Whitelaw.
Lockton : Herbert William.
Mackay : William.
Moffat : Rowland Brockman.
Munford : William David Towell.
Newton : Francis Giesler.
Perrault : Joseph.
Shaw : Walter.
Slatter : Cyril Hugh.
Winder : Thomas.

Membership. The following table shows the membership of the Royal Institute compared with the preceding five years :—

	Fellows.	Associates.	Licentiates.	Hon. Fellows.	Hon. Associates.	H.C.M.	Retd. Fs.	Total.
1920	863	1,773	1,715	11	44	41	43	4,490
1921	969	2,032	1,537	12	45	41	43	4,679
1922	969	2,214	1,487	12	45	38	45	4,810
1923	964	2,316	1,408	10	54	45	47	4,844
1924	970	2,335	1,364	11	54	38	55	4,827
1925	1,206	2,314	2,200	10	64	43	52	5,889

During the official year since the last Annual General Meeting 251 Fellows, 42 Associates, and 886 Licentiates have been admitted, as against 47 Fellows and 116 Associates in the previous year.

Of the 1,206 Fellows whose names appear in the current KALENDAR, 470, or 39 per cent., were elected from the Associate Class ; 181, or 15 per cent., were elected from the Licentiate Class after examination ; 331, or 27 per cent., were elected without examination under the conditions which existed before the grant of the Charter of 1909 ; and 17, or less than 2 per cent., were elected by the Council under Clause 2 of the Charter of 1909, while 207, or 17 per cent, were admitted under the Charter of 1925. Of the 2,314 members of the Associate Class 1,123, or 48 per cent., have been elected since the date of the Armistice. Of the 2,200 Licentiates, 1,314, or 60 per cent., were admitted under the Charter of 1909, and 886, or 40 per cent, under the Charter of 1925.

The Allied Societies. The membership of the Allied Societies, as given in the last issue of the KALENDAR, now reaches a total of 4,662, including 1,612 Members of the Royal Institute. The membership of the Architectural Association is now 1,662, including 758 Members of the Royal Institute.

The Council have had the pleasure of admitting to alliance the Bombay Architectural Association.

Assessors. Since the issue of the last Annual Report, the following Assessors have been appointed on the President's nomination :—

Leeds Maternity Hospital Extensions—Mr. R. Burns Dick [*F.*].
Cardiff Branch Library (Gabalfa)—Mr. S. K. Greenslade [*F.*].
British Pavilion : International Exhibition of Decorative Art : Paris—Mr. H. S. Goodhart-Rendel [*F.*].
Dundee Secondary School—Mr. J. A. Carfrae [*L.*].
Canberra (Australia) War Memorial—Sir Edwin Lutyens, R.A. [*F.*].
Daily Express Design for a Middle Class Dwelling House—Mr. H. A. Welch [*F.*] and Mr. W. A. Harvey [*F.*], Joint Assessors.

Edmonton Elementary School—Mr. Maurice E. Webb [*F.*].
Coventry War Memorial : King Henry VIII School—Mr. C. E. Bateman [*F.*].
Southend Senior Elementary (Intermediate) School—Mr. J. W. Fisher [*F.*].
Geneva : League of Nations Assembly Hall—Sir John J. Burnet, R.A. [*F.*].
Norwich Shirehouse Extension—Mr. Godfrey Pinkerton [*F.*].
Wimbledon Town Hall, Municipal Offices and Public Assembly Hall—Mr. H. Austen Hall [*F.*].
Coalville Public Baths—Mr. Alfred W. S. Cross. [*F.*].

Arbitrators. During the year the President has appointed the following Members to act as arbitrators in connection with building disputes :—

Mr. W. H. Atkin-Berry [*F.*].
Major Harry Barnes [*F.*].
Mr. Herbert T. Buckland [*F.*].
Mr. Max Clarke [*F.*].
Mr. Heaton Comyn [*F.*].
Major H. C. Corlette [*F.*].
Mr. A. W. S. Cross [*F.*].
Mr. Joseph Crouch [*F.*].
Mr. Horace Cubitt [*A.*].
Sir Banister Fletcher [*F.*].
Mr. J. Ernest Franck [*F.*].
Mr. Mowbray A. Green [*F.*].
Mr. F. H. A. Hardcastle [*A.*].
Mr. Arthur J. Hope [*F.*].
Mr. George Hubbard [*F.*].
Mr. W. Campbell Jones [*F.*].
Mr. Francis Jones [*F.*].
Mr. Delissa Joseph [*F.*].
Mr. Arthur Keen [*F.*].
Mr. A. G. Leighton [*F.*].
Mr. Gilbert H. Lovegrove [*F.*].
Mr. Arthur McKewan [*A.*].
Mr. T. R. Milburn [*F.*].
Mr. E. C. P. Monson [*F.*].
Mr. Alan E. Munby [*F.*].
Mr. E. J. Partridge [*F.*].
Mr. Reginald A. Rix [*A.*].
Mr. Rupert Savage [*F.*].
Mr. H. D. Searles-Wood [*F.*].
Mr. Gillbee Scott [*F.*].
Mr. J. Douglas Scott [*A.*].
Mr. W. S. Skinner [*F.*].
Mr. J. Alan Slater [*F.*].
Mr. Digby L. Solomon [*F.*].
Mr. H. F. Traylen [*F.*].
Mr. Paul Waterhouse [*F.*].
Mr. Herbert A. Welch [*F.*].
Mr. Charles Woodward [*A.*].
Mr. Wm. Woodward [*F.*].

Grants. Since the issue of the last Annual Report the Council have made the following grants :—

The Architectural Association	£100	0	0	Federal Council (South Africa), on Architectural Education	21	0	0
The Architects' Benevolent Society	100	0	0	London Survey Committee	10	10	0
The British School at Rome	100	0	0	Royal West of England Academy School of Architecture	50	0	0
The British School at Rome (Faculty of Archæology)	3	3	0	Society for the Protection of Ancient Buildings (Whitgift Hospital Preservation)	4	11	6
British Non-Ferrous Metals Research Association	15	0	0	St. Paul's Cathedral Preservation Fund	105	0	0
British Engineering Standards Association	5	0	0	Tokyo University—Books	31	17	6

The Royal Gold Medal. The Royal Gold Medal for Architecture for the year 1924 was not awarded. This year the Medal is to be awarded to Sir Giles Gilbert Scott, R.A., in recognition of the merit of his work as an Architect. His Majesty has graciously signified his approval of the award, and the Medal will be presented on the 22nd June, 1925.

Appointments. During the Session the Council have made the following appointments of Members to represent the Royal Institute on the various bodies or for the purposes indicated :—

International Garden Cities and Town Planning Federation Conference, Amsterdam, 1924—Dr. Raymond Unwin [*F.*]
Professional Classes Aid Council—Mr. Paul Waterhouse [*F.*]
National Association for Prevention of Tuberculosis, Annual Conference—Mr. E. Stanley Hall [*F.*]
Société Vaudoise des Ingénieurs et des Architectes, Fiftieth Anniversary Celebrations at Lausanne—Lt.-Col. H. P. Cart de Lafontaine [*A.*]
Garden Cities and Town Planning Association, Thames-side Housing and Development Committee—Mr. Arthur Crow [*F.*], Mr. W. R. Davidge [*F.*], Col. R. C. Hellard and Mr. H. V. Lanchester [*F.*].
Decimal Association Conference—Mr. H. D. Searles-Wood [*F.*].
Sunlight League—Mr. H. D. Searles-Wood [*F.*].
Court of Governors of University of Sheffield—Mr. Robert Atkinson [*F.*].
Council of British School at Rome—Sir John W. Simpson [*F.*].
British Waterworks Association, Standing Committee on Water Regulations—Mr. H. D. Searles-Wood [*F.*] and Mr. Percival M. Fraser [*F.*].
Institute of Public Lighting Engineers and Superintendents, First Annual Meeting and Conference, Glasgow—Mr. John Keppie [*F.*] and Mr. James Lochhead [*F.*]
University of Leeds, Celebration of Coming of Age—Mr. W. Alban Jones and Mr. H. S. Chorley [*F.*].
Ministry of Health Committee on Small House Building—Major Harry Barnes [*F.*].
Conference on Richmond Bridge—Mr. Percival M. Fraser [*F.*] and Mr. L. H. Bucknell [*A.*].
Tribunal of Appeal, London Building Act—Sir Banister Fletcher [*F.*].

Appointments—*continued.*

University of London Architectural Education Committee—Mr. Arthur Keen [*F.*] and Mr. Maurice E. Webb [*F.*].
Royal Sanitary Institute Congress, Edinburgh, 1925—Mr. J. Inch Morrison [*L.*].
St. Paul's Bridge Conference—Mr. L. H. Bucknell [*A.*].
National Association of Water Users—Mr. Percival M. Fraser [*F.*] and Mr. Edwin J. Sadgrove [*F.*].
Court of University of Bristol—Mr. Mowbray A. Green [*F.*].
National Register of Electrical Installation Contractors—Mr. Max Clarke [*F.*] and Mr. Alan E. Munby [*F.*]
Conference of British Engineering Standards Association—Mr. Percival M. Fraser [*F.*] and Mr. C. A. Daubney [*F.*]
Royal Academy Conference on City Churches—Sir Banister Fletcher [*F.*].
St. Paul's Cathedral Preservation Committee—Capt. C. Stanley Peach [*F.*].

Sessional Papers. The following Papers have been read since the issue of the last Annual Report :—

" The Scheme for a Thames Embankment after the Great Fire of London," by Mr. Sydney Perks, F.S.A. [*F.*].
" The Proposed Reform of the London Building Law," by Mr. Charles A. Daubney [*F.*].
" Planning for Good Acoustics," by Mr. Hope Bagenal, D.C.M. [*A.*].
" Shop Fronts and their Treatment," by Mr. Arthur J. Davis [*F.*].
" Applications in Building and Foundations of Modern Engineering Construction," by Dr. Oscar Faber, O.B.E. [*H.A.*].
" The Corporate Spirit in Architecture," by Mr. F. R. Hiorns [*F.*].
" The Architectural Treatment of Ferro-Concrete," by Mr. A. Beresford Pite, Hon. M.A. Cantab. [*F.*].
" Natural and Artificial Lighting," by Mr. Percy J. Waldram [*L.*].

Unification and Registration. The proposals of the Council for the amalgamation of the Society of Architects with a view to the promotion of a Registration Bill, was approved by the general body of the R.I.B.A. and by the Society of Architects. The new Charter to enable the amalgamation to be carried into effect has received His Majesty's sanction, and the new Bye-Laws have been approved by the Privy Council. The admission of the Members of the Society of Architects is almost completed, and the separate existence of the Society will shortly be terminated. The profession is to be congratulated on the successful attainment of the great object which has been sought for so many years. The thanks of the R.I.B.A. are especially due to the President, Council, and Staff of the Society of Architects, who have all worked with the most single-minded devotion in achieving the gratifying results which are now put on record.

The Registration Committee, under the Chairmanship of Major Harry Barnes, has been at work for several months on the draft Registration Bill, and no time will be lost in pursuing the policy which is now supported by a united profession.

Provincial Conferences. The Annual Conference of 1924 was held at Oxford at the invitation of the Berks, Bucks and Oxon Architectural Association. The arrangements for the Conference were made by the Executive Committee appointed by the Council of the Association, and the thanks of the R.I.B.A. and of all the Allied Societies are due to the members of this Committee for the work which they did. Our thanks are especially due to the Oxford members of the Committee on whom, inevitably, a large share of the work devolved. The generous hospitality of the Vice-Chancellor and the authorities of the University generally, and of the governing bodies of many of the Colleges, and the welcome extended by the Mayor and Corporation of the City of Oxford, enabled a programme to be arranged which will be vividly remembered by all those who were so fortunate as to take part in the Conference.

The Annual Conference of 1925 will be held from 8 to 11 July, at Newcastle and Durham, at the invitation of the Northern Architectural Association. A very attractive and interesting programme is in process of preparation.

Annual Dinner. The Annual Dinner of the R.I.B.A. will be held at the Trocadero Restaurant, Piccadilly Circus, on Tuesday, 12 May 1925, when a large number of distinguished guests will be present.

National Housing. A new Scale of Fees for Housing Work was approved by a General meeting on 16 February 1925. Copies of this Scale have been sent to the Ministry of Health and to Local Authorities.

Architects' War Relief Fund Committee. The money granted by the Prince of Wales' Fund and administered by the War Relief Fund Committee, of which Mr. Searles-Wood is Chairman, is now practically exhausted. Five meetings have been held during the year, and nine cases have been assisted with grants.

The R.I.B.A. Premises. The necessity for larger and more suitable premises for the growing activities of the R.I.B.A., and, in particular, to provide for the needs of the Library, is more urgent than ever. The matter is being dealt with by a Special Committee, and it is hoped that at an early date it will be possible to submit a report to the members.

The Archibald Dawnay Scholarship. The following award has been made :—

Arthur Edwin Cameron (Architectural Association)—£25.

The following additional grants have also been made :—

G. A. Burnett (Leeds School of Art)—£20.
I. R. Erith (Architectural Association)—£20.
A. C. Todd (Liverpool University)—£20.

Street Architecture Medals. The jury appointed, under the Chairmanship of the Earl of Crawford and Balcarres [Hon. *F.*], to award a medal for the building with the best street façade within four miles of Charing Cross, and completed within the year 1923, was awarded to Mr. Francis T. Verity [*F.*] for his building, the Shepherd's Bush Cinema. The Medal was presented to Mr. Verity at the General Meeting on 3 November 1924.

The Medal for the year 1924 has been awarded to Messrs. Greenaway and Newberry [*FF.*], for their building, the Auctioneers' and Estate Agents' Institute.

Conditions of Contract. The negotiations with the representatives of the National Federation of Building Trades' Employers are still proceeding.

The R.I.B.A. Prizes and Studentships. The Deed of Award of the various Prizes and Studentships was presented to the Royal Institute at the General Meeting on 19 January 1925. At the presentation of Prizes on 2 February 1925 an Address to Students was delivered by the President, and a criticism of the work submitted was read by Mr. Maurice E. Webb, D.S.O., M.C. [*F.*]. An Exhibition of the Drawings was held from 19 January to 2 February in the R.I.B.A. Galleries, and was well attended. A selection of the Prize Drawings is now being sent round the Allied Societies.

The Henry Jarvis Studentships. The Henry Jarvis Studentship of £250 a year for two years tenable at the British School at Rome was awarded to Mr. Marshall Arnott Sisson. The Studentship of Mr. Edwin Williams was specially extended for a third year.

The Henry Jarvis Studentship of £50 tenable at the Architectural Association was divided between Mr. John William Wood and Mr. Frederick Leslie Preston.

The Henry Jarvis Trust. The following statement has been received from the Trustees :—

The Capital, mostly invested in Colonial Government Securities, was, on 31 December 1924, of the nominal value of £16,293 4*s.* 7*d.*

The Income received during the year 1924 (including Income Tax refunded) amounted to £557 6*s.* 4*d.*, to which amount must be added the sum of £1,069 7*s.* 2*d.*—proceeds of sale of £1,000 5 per cent. National War Bonds (being a portion of £1,500 invested income)—making a total amount of £1,626 13*s.* 6*d.*

The income available for distribution at the end of 1924 was represented by a sum of £500 still remaining invested in 5 per cent. War Bonds as available income, together with a balance at the Bank of £330 15*s.* 6*d.*

Exhibitions. The following Exhibitions have been held in the Galleries during the period under review :—

Swedish Architecture.
* Work of Students of the British and French Schools at Rome, and the American Academy at Rome.
* Educational Books and Equipment.

* *In connection with the International Congress on Architectural Education.*

Original drawings by the late Sir Charles Barry and James Brooks.
Designs by Students exempted from the R.I.B.A. Intermediate and Final Examinations.
Water colour drawings by the late Sir Ernest George and Thomas E. Collcutt.
R.I.B.A. Prizes and Studentships.
Architects' Working Drawings.
Pen, Pencil and Pastel Sketches by Mr. T. Raffles Davison.
Mural Painting.

The R.I.B.A. Travelling Cards. Since the issue of the last Annual Report 73 Travelling Cards have been issued for the use of Members and Students visiting places of interest abroad ; 22 cards have been issued for use in the United Kingdom.

Architectural Exhibition at Wembley. The Council accepted an invitation from the authorities of the British Empire Exhibition to organise, in co-operation with the Architecture Club, an Exhibition of British Architecture, which was opened by the Earl of Crawford and Balcarres [Hon. *F.*] on 26 May, 1924.

The Allied Societies. The year has been marked by a steady continuance of the development of the Allied Societies. The following new Society has been admitted to alliance :

The Bombay Architectural Association.

In the provinces of the Manchester Society of Architects, the Liverpool Architectural Society and the Birmingham Architectural Association branch Societies are being affiliated, and the total number of Societies and branches in the British Empire now allied with the Royal Institute is 57.

The Tribunal of Appeal (London Building Act). In consequence of the lamented death of Mr. John Slater [*F.*], who had represented the Royal Institute on the Tribunal of Appeal since the year 1909, Sir Banister F. Fletcher [*F.*], was appointed to fill the vacant position.

Wages Slips on Tenders. The Council of the Royal Institute and the National Federation of Building Trades' Employers have agreed to continue the arrangement made in 1924 for a further 12 months until 25 March 1926. The conditions are as follows :—

(*a*) That if any Slips are attached to tenders they should provide only for actual wage increases or decreases to men employed by the contractors or sub-contractors at the agreed standard rates and paid by the hour, and not for the inclusion of overhead charges or profit, upon such increases as well.

(*b*) That the Slips shall not be affixed to tenders up to £2,500 provided that in the case of tenders below £2,500 a provisional sum shall be included equal to 2½ per cent. on the total tender out of which the above increases to men paid by the hour are to be met, but such provisional sum in any event shall not be exceeded.

The Royal Fine Art Commission. The Council have watched with interest and appreciation the first year's work of the newly-constituted Royal Fine Art Commission. They are confident that, if properly supported by the Government, the local authorities, and the public generally, the Commission has it in its power to render services of the greatest value to the nation.

The International Congress on Architectural Education. The Congress which was held in July and August was completely successful and fully justified the decision to organise it. The thanks of the Royal Institute are due to all those whose labours over a period of nearly two years were responsible for the results achieved. A fully illustrated volume of " Transactions " is in course of preparation.

The Federal Council of Architectural Education (South Africa). The Council have welcomed the formation of this body, which has already done much to improve and co-ordinate the instruments of architectural education in the Union of South Africa.

The Tokyo University Library. The sympathy of the civilised world led to a movement for the supply of books to restore the destroyed Library of the Tokyo University. With the assistance of the Literature Standing Committee a substantial gift was sent to Japan by the Royal Institute.

Sir Aston Webb. It was with feelings of more than ordinary regret that the Council marked the retirement of Sir Aston Webb (Past-President) from the Presidency of the Royal Academy. During his five years' tenure of that position he had done much to increase the usefulness and enhance the prestige of the Royal Academy, and in so doing he had conferred additional distinction upon the architectural profession. The Council have learned with pleasure of his steady recovery of health after his serious accident last year. In his stead the Council have had the pleasure of greeting Sir Frank Dicksee, one of their oldest Hon. Associates, as President of the Royal Academy.

The London Building Acts Committee. After more than a year of unremitting labour the London Building Acts Committee completed a Report in April 1924. The proposals contained in the Report have been submitted to the London County Council, together with an invitation for an extended conference upon the subject of the amendment and consolidation of the existing Building Law in London.

Illegal Use of the R.I.B.A. Affix. In the course of the year several cases have been reported to the Council in which the affix indicating membership of the R.I.B.A. has been illegally employed by persons not entitled to it. In one case, as the offence had been repeated in violation of a pledge in writing, legal proceedings were taken and the necessary injunction was obtained against the offender.

The American Institute of Architects. A signal honour has been conferred upon English Architecture by the award of the Gold Medal of the American Institute of Architects to Sir Edwin Lutyens, R.A. [*F.*]. The last occasion on which this Medal was awarded to an English architect was in the year 1907, when it was presented to Sir Aston Webb. Sir Edwin Lutyens received the Medal in person at the Annual Convention of the American Institute in New York. On this occasion a cordial invitation was extended to British architects generally to attend the Convention. Considerations of time and expense made it impossible for a large number to accept this generous invitation, but a certain number of members were able to make the journey.

The Regulations for Architectural Competitions. The revised Regulations for the conduct of Architectural Competitions, having been approved at a general meeting, were published. Copies of them have been sent with a suitable covering letter to the public authorities.

The Architects' and Builders' Consultation Board. In March 1925 the Council of the R.I.B.A. approved the establishment of an "Architects' and Builders' Consultation Board," consisting of four Architects appointed by the Council of the R.I.B.A. and four Builders appointed by the National Federation of Building Trades Employers.

This Board is advisory only and has been set up to consider and report upon matters affecting the Building Industry generally, with power to consult the organisations representing the interests of Employers, Operatives, Surveyors and Architects, and to examine and discuss matters which tend to create friction between these organisations. Questions such as impending changes of policy, procedure or methods current in the industry, allegations of encroachment by any Organisation or its members upon the functions of another Organisation or its members, technical matters in connection with the Industry and Government proposals for legislation which may affect the Industry, will also be within the scope of the Board.

The Members of the Board are Major Harry Barnes, Messrs. Henry V. Ashley, Arthur Keen and Herbert A. Welch, Architect Members ; Messrs. W. H. Nicholls, H. T. Holloway, Henry Matthews and Sir Walter Lawrence, Builder Members. Major Barnes has been appointed Chairman for one year. The meetings of the Board are attended by the Secretaries of the two constituent bodies.

REPORT OF THE BOARD OF ARCHITECTURAL EDUCATION

Since the beginning of the Session the Board have held seven meetings.

Mr. W. Curtis Green, A.R.A., was elected Chairman, Mr. Walter Cave and Mr. Maurice E. Webb were elected Vice-Chairmen, and Mr. Henry M. Fletcher, Hon. Secretary.

The International Congress on Architectural Education.—The most important event of the past year was the International Congress on Architectural Education, which was held at the R.I.B.A. from 28 July to 2 August 1924 inclusive. H.R.H. the Prince of Wales and H.R.H. the Duke of Connaught graciously consented to become Patrons of the Congress, the arrangements for which were in the hands of an Executive Committee under the Chairmanship of Mr. Maurice E. Webb [*F.*], composed of the following :—

Sir Reginald Blomfield, R.A.
Sir John Burnet, R.A.
Lt.-Col. H. P. L. Cart de Lafontaine.
Arthur J. Davis.
G. Topham Forrest.
W. Curtis Green, A.R.A.
Stanley H. Hamp.
Arthur Keen.
Professor Beresford Pite.
W. S. Purchon.
Professor C. H. Reilly.
Professor A. E. Richardson.
Howard Robertson.
H. D. Searles-Wood.
Evelyn Shaw.
Paul Waterhouse.

Mr. Henry M. Fletcher was the Hon. Secretary of the Committee.

The Executive Committee appointed the following Sub-Committees :—Congress Papers Sub-Committee, Congress Exhibition Sub-Committee, Congress Finance Sub-Committee, Congress Visits and Dinner Sub-Committee.

Papers were read and discussions held on the Past, Present and Future of Architectural Education in America, France, Italy and England, while the other countries participating in the Congress sent résumés of the Past, Present and Future of Architectural Education in their respective countries.

Exhibitions of Students' work were held at the R.I.B.A., in Grosvenor House (by kind permission of His Grace the Duke of Westminster), and in Devonshire House (by kind permission of Messrs. Holland and Hannen and Cubitts). In the R.I.B.A. Library there was an Exhibition of rare architectural books and Architects' sketch books.

In the East Gallery at the R.I.B.A. there was an Exhibition of Educational Books and Equipment.

There were 254 members of the Congress and representatives attended from the following countries : Canada, Australia, New Zealand, France, Italy, Austria, Spain, Belgium, Holland, Denmark, Sweden, Norway, Russia, United States of America, Argentine Republic, Czecho-Slovakia, Mexico, Japan.

On the day of arrival of the members of the Congress the President and Council of the R.I.B.A. held a reception. On Tuesday, 29 July, the Chairman and members of the Board of Architectural Education held a reception in Grosvenor House. The President and Council of the Architectural Association also entertained to luncheon those members who visited the School of Architecture of the Architectural Association.

The following visits also took place : The Bartlett School of Architecture, University of London ; Greenwich (by steamer) ; the British Empire Exhibition, Wembley ; Cambridge ; St. Paul's Cathedral ; the City Churches ; the British Museum ; Westminster Abbey.

The Congress Banquet was held at the Hotel Victoria, Northumberland Avenue.

An Informal Meeting of Teachers took place at the R.I.B.A. for the discussion of matters affecting Schools of Architecture.

It is hoped that the Congress, the first of its kind ever held, will have done much to advance the cause of architectural education.

Committees.—The following Committees of the Board have been appointed : Committee of Teachers, Examinations Committee, Problems in Design and Testimonies of Study Committee, Probationers' Registration Committee.

Sub-Committees to deal with particular questions have been appointed as follows : Technical, Institutions Sub-Committee, Hanging Sub-Committee for Exhibition of Exempted Students' Work, The R.I.B.A. (Archibald Dawnay) Scholarships Jury, the Prizes Sub-Committee. The Committees of the Board have met from time to time and have reported on the matters referred to them.

Exemption from the Final Examination.—The following Schools are recognised, under the usual conditions, for exemption from the Final Examination :—

University of Liverpool : School of Architecture.
University of London : School of Architecture.
Victoria University, Manchester : School of Architecture.
The Architectural Association (London) School of Architecture.
Glasgow School of Architecture.
Robert Gordon's Colleges, Aberdeen : School of Architecture.
McGill University, Montreal : School of Architecture.

Exemption from the Intermediate Examination.—The following schools are recognised, under the usual conditions, for exemption from the Intermediate Examination :—

University of Liverpool : School of Architecture.
University of London : School of Architecture.
Victoria University, Manchester : School of Architecture.
The Architectural Association (London) School of Architecture.
Glasgow School of Architecture.
University of Sheffield : Department of Architecture.
Edinburgh College of Art and Heriot-Watt College : Department of Architecture.
Cambridge University : School of Architecture.
Robert Gordon's Colleges, Aberdeen : School of Architecture.

Leeds School of Art : Department of Architecture.
The Technical College, Cardiff : Department of Architecture.
Bombay School of Art : Department of Architecture.
McGill University, Montreal : School of Architecture.
University of Toronto : Department of Architecture.
Armstrong College, Newcastle-upon-Tyne : Department of Architecture.
Birmingham School of Architecture.

Exemption from the Intermediate Examination has also been granted, on certain conditions, to the School of Architecture, the Royal West of England Academy, Bristol.

R.I.B.A. Scholarships at the Universities of Oxford and Cambridge.—The Council, on the recommendation of the Board, have offered to the University of Cambridge, from the income of the Anderson and Webb and Donation Funds, an Annual Scholarship for the advancement of the study of the Art of Architecture within the University in the School recognised by the University Authorities and the R.I.B.A. as qualifying for their degrees and examinations respectively.

In the event of a School of Architecture being started in Oxford on the lines of that at Cambridge, it is the intention that the Scholarship shall be awarded at Oxford and Cambridge in alternate years.

On the invitation of the Council, the Cambridge University Board of Architectural Studies are considering suitable regulations for the administration of the Scholarship.

The Special Examination qualifying for candidature as Associate R.I.B.A.—The Council have decided that candidates shall be allowed to take the Special Examination in two parts as in the case of the Final Examination.

List of Books recommended to Students.—The Board have approved the issue of a List of Books recommended to Students.

The list is also printed in the KALENDAR and the Membership Pamphlet, and copies in pamphlet form have been sent to all Probationers and Students of the R.I.B.A. A copy is also sent with each notification of registration as Probationer.

The Intermediate Examination : Testimonies of Study.—The Board have approved the issue of revised regulations for the Testimonies of Study required in support of applications for admission to the Intermediate Examination.

Students of Recognised Schools exempted from the Final Examination : Office Experience.—The Council, on the recommendation of the Board, have decided that in the case of 4th and 5th year students, six months spent on building works and/or in a builder's office (approved by the School) and in otherwise gaining knowledge of the practical side of building, shall be recognised as equivalent to six out of the twelve months required to be spent in an architect's office.

The Intermediate and Final and Special Examinations : Syllabus.—On the recommendation of the Board, the Council have approved a revised syllabus for the Intermediate, Final and Special Examinations.

The revised syllabus will come into operation for the Summer Examinations, 1925.

British Empire Exhibition Scholarship Fund.—The Board have been in communication with the Trustees for the Scholarship Fund with a view to obtaining Scholarships on behalf of Architectural Students from the Dominions.

Informal Conference of Teachers.—The Board have decided to hold annually at the R.I.B.A. an Informal Conference of Teachers.

The Conference will meet on 26 September 1925.

Exhibition of Designs of Students exempted from the R.I.B.A. Intermediate and Final Examinations.—The Exhibition was held in the R.I.B.A. Galleries in October 1924.

The designs were inspected by the Board and the Exhibition was subsequently opened to the public.

In the case of students of Recognised Schools exempted from the Final Examination, the Council, on the recommendation of the Board, have decided that two designs (one of which must be carried to the stage of working drawings), instead of four designs, shall be submitted on behalf of each student exempted.

R.I.B.A. Silver Medal for Recognised Schools.—On the recommendation of the Board, the Council awarded to Miss E. Rogers of the School of Architecture, Manchester University, the Silver Medal for the best set of drawings submitted at the Exhibition of Designs of Students exempted from the Final Examination.

Advisory Members of the Board.—The Council have appointed the following Advisory Members of the Board :—

Professor Patrick Abercrombie, M.A., representing Liverpool University Department of Civic Design, School of Architecture.
W. H. Bidlake, M.A., and Herbert T. Buckland, Birmingham.
G. Washington Browne, R.S.A., representing Edinburgh College of Art.
C. de Gruchy, representing the Royal Academy Architectural School.
Professor Ramsay Traquair, representing McGill University, Montreal.
Professor Percy Nobbs, M.A., R.C.A., representing McGill University, Montreal.
Professor Leslie Wilkinson, representing Sydney University.
Rev. Arthur Chilton, D.D. } representing the Head Master's Conference.
C. G. Greene, M.A. }
E. Fiander Etchells, A.M.Inst.C.E., representing the Institute of Structural Engineers.
S. Hurst Seager, representing New Zealand.
Rodney H. Alsop, representing Victoria, Australia.
C. D. Carus-Wilson, M.C.
Major H. C. Corlette, O.B.E., F.S.A., representing New South Wales.
Professor A. Wellesley McConnell, B.A.Sc., representing University of Toronto.
M. S. Briggs, H.M.I., Board of Education.

Problems in Design and Testimonies of Study.—During the year ending 28 February 1925, 193 Designs have been received and 124 have been approved. Whenever possible, successful designs have been exhibited in the Galleries for the information of students.

A selection of successful designs has been sent on a tour to the Allied Societies for exhibition to assist students in the provinces.

Pupils in Offices.—On the recommendation of the Board, the Council have requested Members and Licentiates not to accept pupils until they have been registered as Probationers R.I.B.A.

R.I.B.A. Visiting Board.—The Visiting Board for 1924 was constituted as follows : Mr. Paul Waterhouse, Mr. W. Curtis Green, A.R.A., Mr. Maurice E. Webb, Professor C. H. Reilly.

Mr. M. S. Briggs [*F.*] (H.M.I.), has accompanied the Visiting Board upon their visits to those Schools of Architecture which have official relations with H.M. Board of Education.

During the past year Reports on the following Schools have been approved by the Council and forwarded to the respective Governing Bodies :—

School of Architecture, Royal West of England Academy, Bristol.
School of Architecture, University of Cambridge.
Department of Architecture, The Technical College, Cardiff.
School of Architecture, University of Liverpool.
School of Architecture, Victoria University, Manchester.
School of Architecture, The Architectural Association.
School of Architecture, Edinburgh College of Art.

The governing authorities have expressed themselves grateful for the suggestions made by the Visiting Board and improvements have already been effected in the Schools visited.

For the year 1925 the following have been appointed to constitute the Visiting Board : Mr. W. Curtis Green, A.R.A. ; Mr. Maurice E. Webb ; Mr. Henry M. Fletcher ; Professor C. H. Reilly.

Mr. M. S. Briggs will again accompany the Visiting Board upon certain of their visits.

Examinations for Building Surveyors : The Building Surveyors' and Inspectors' Association.—The Board have had under consideration a suggestion from the Building Surveyors' and Inspectors' Association that the Association should adopt, as their examination, the R.I.B.A. Examination for Building Surveyors to Local Authorities.

On the recommendation of the Board, the Council have approved amendments to the syllabus for the Examination for District Surveyors in London and for Building Surveyors under Local Authorities.

The Council have also informed the Building Surveyors' and Inspectors' Association that they would be prepared to invite the Association to nominate a representative to attend the meetings of the R.I.B.A. Statutory Examiners in an advisory capacity on those occasions upon which candidates from the Building Surveyors' and Inspectors' Association present themselves for the Examination.

Conference between the Board and Teachers of Building.—The Board have been in communication with H.M. Board of Education on the subject of a Conference between the Board and representative Teachers of Building who are taking a summer course in London arranged by H.M. Board of Education.

It has been decided to hold the Conference on 28 July 1925.

Schools of Building and Schools of Architecture not recognised by the R.I.B.A. for the purpose of exemption from its Examinations.—The Board have appointed a special Sub-Committee to inquire into the facilities for and the improvement of education in Architecture and Building Construction in Schools not recognised by the R.I.B.A.

Examination for the R.I.B.A. Diploma in Town Planning.—As a result of the experience gained in the Examination which was held for the first time in October 1924, the Council have approved certain amendments to the regulations for the Examination.

On the recommendation of the Board, the Council have decided to arrange for a modified Examination for the Diploma in the case of approved candidates from the Dominions until it is possible to hold the Examination in the usual way overseas.

Registration of Probationers : Senior Certificate Examination of the Ministry of Education, Northern Ireland.—The Council have decided to accept the Senior Certificate Examination of the Ministry of Education, Northern Ireland, in support of applications for registration as Probationer R.I.B.A., provided the Certificate covers the required subjects.

Prizes and Studentships.—There was a good entry for the competitions for the Prizes and Studentships. Juries of five members each were appointed by the Board to judge the drawings submitted.

The report of the Board was adopted by the Council and the Award was published in the JOURNAL for 24 January 1925.

The Conference on Prizes.—In order to consider the co-ordination of the Prizes of the British School at Rome, the R.I.B.A. and the Society of Architects, with special reference to the establishment of a scheme of progression from the smaller to the larger Prizes, the Board convened a Conference, under the Chairmanship of Mr. Maurice E. Webb, composed of representatives of the following bodies : The R.I.B.A., The British School at Rome, The Royal Academy of Arts, The Society of Architects, The University of London, Robert Gordon's Colleges, Aberdeen ; Glasgow School of Architecture ; The University of Liverpool ; The Victoria University, Manchester ; The Royal West of England Academy, Bristol ; The University of Cambridge ; Edinburgh College of Art ; The Technical College, Cardiff ; The London County Council ; The Carpenters' Company ; The Allied Societies' Conference ; The Town Planning Institute ; The Royal Society of Arts.

A Committee of the Conference was appointed to draw up a scheme which has been adopted by the Conference and by the Board and approved by the Council in so far as the recommendations affect the Prizes in the control of the R.I.B.A.

The scheme divides the Prizes into three sections :—

1. *Students' Prizes for Design.*—The Tite Prize, the Soane Medallion and the Victory Scholarship (alternate years), the Rome Scholarship in Architecture, the R.I.B.A. (Henry Jarvis) Studentship.

2. *Sketching and Measured Drawings Prizes.*—The R.I.B.A. Silver Medal for Measured Drawings, the Pugin Studentship.

3. *Post-graduate Prizes.*—The Godwin Bursary and Wimperis Bequest, the R.I.B.A. (Alfred Bossom) Travelling Studentship, the Owen Jones Studentship, the R.I.B.A. Silver Medal for Essays, the Grissell Gold Medal, the Henry Saxon Snell Prize.

The Prizes for Design have been arranged in the form of a ladder, and the same system of competitions has been adopted as is used for the Rome Scholarship in Architecture—*i.e.*, Preliminary and Final " en loge " competitions. The competitions will be open to candidates with specified qualifications, and, in the case of the Soane Medallion and the Victory Scholarship, exemption from the Preliminary " en loge " competition will be granted under certain conditions.

The scheme was approved by the Society of Architects, who made allocations of their funds to make it possible to carry out certain of the recommendations. Arrangements are being made for carrying the scheme into effect.

Maintenance Scholarships.—The Conference on Prizes also have under consideration a scheme of Maintenance Scholarships : (*a*) to enable students to take a good School Course who would otherwise be unable to do so ; (*b*) to enable students who have done three years in a School of Architecture to continue for the 4th and 5th years of the course.

The details of the scheme are under consideration by the Conference.

The Council of the R.I.B.A. have decided to found one Maintenance Scholarship of £100 per annum.

The Society of Architects have set aside a sum towards the fund for the Scholarships, and the Rev. Dr. and Mrs. Hugh Currie have promised to give to the R.I.B.A. on their decease the sum of £1,000 for the purpose of founding a Maintenance Scholarship in memory of their son. The Proprietors of the *Builder* have promised £250 to be spread over three years.

The question of founding Maintenance Scholarships is also under consideration by the Artists' General Benevolent Institution.

The Allied Societies Conference have decided to support the scheme for the Scholarships, and have the question of forming an Allied Societies Maintenance Scholarship Fund under consideration.

The R.I.B.A. (Henry Jarvis) Studentship £250 at the British School at Rome 1924 was awarded to Mr. M. A. Sisson.

The R.I.B.A. (Henry Jarvis) Studentship £50 (for Construction) at the Architectural Association was awarded to Mr. J. W. Wood and Mr. F. L. Preston.

The R.I.B.A. Scholarship at Cambridge was awarded to Mr. Edward Le Bas and Miss Norah Aiton.

Travelling Scholarships in Architecture, Sydney, New South Wales.—It has been arranged that the Chairman of the Board shall co-operate with Major H. C. Corlette, representing the Federal Council of the Australian Institutes of Architects, in the administration of the Scholarships while the students are in England.

The R.I.B.A. (Archibald Dawnay) Scholarships.—On the recommendation of the Board, the Council have approved a revised scheme for the Scholarships, which are intended to assist students in the advanced study of construction, and are tenable at any recognised school selected by the successful candidates.

Registration as Probationer.—During the year ending 28 February 1925, 293 Probationers have been registered.

University of Cape Town School of Architecture.—The Board have been informed that the Cape School of Architecture has been taken over by the University of Cape Town.

The Board are in touch with the Council of the Cape Institute of Architects and with the University Authorities in connection with the syllabus of the School and the question of exemption from the Examinations of the R.I.B.A.

The Intermediate, Final and Special Examinations.—The Intermediate Examination has been held twice in England and once in Cape Town.

The Final and Special Examinations have been held twice in England and once in Sydney and Canada.

		R.I.B.A. Examinations.		
	Passed in Recognised Schools.	Examined.	Passed.	Relegated.
Intermediate Examination—England	54	123	44	79
" " Cape Town	—	5	4	1
Total	54	128	48	80
Final and Special Examination—England	25	63 6 Part 1 3 Part 2	19 2 Part 1	51
" " Canada	—	1	1	—
" " Sydney	—	2	—	2
Total	25	75 including 6 Part 1 and 3 Part 2	22 including 2 Part 1	53

One hundred and two students have, therefore, been added to the Register during the year ending 28 February 1925, and 45 have received exemption from or passed the Final (or Special) Examination qualifying for the Associateship.

At the Examination for the R.I.B.A. Diploma in Town Planning, two candidates were examined, but neither were successful in gaining the Diploma.

At the Statutory Examination qualifying for candidature as District Surveyor in London, one candidate was examined and failed to pass.

The Council tender their grateful acknowledgments to the Examiners for their services.

Attendance of Members.— Since the beginning of the Session the attendance of Members at meetings of the Board, exclusive of Committee and Sub-Committee meetings, has been as follows :—

	No. of Attendances at the 7 Meetings of the Board.		No. of Attendances at the 7 Meetings of the Board.
The President, R.I.B.A.	–	E. Stanley Hall	5
The Hon. Secretary, R.I.B.A.	3	H. V. Lanchester	1
Robert Atkinson	4	Basil Oliver	7
H. Chalton Bradshaw	7	W. S. Purchon	6
Professor L. B. Budden	1	Professor C. H. Reilly	7
Walter Cave	5	Professor A. E. Richardson	6
Professor A. C. Dickie	3	H. D. Searles-Wood	6
Henry M. Fletcher	6	*L. Sylvester Sullivan	3
H. S. Goodhart-Rendel	4	Paul Waterhouse	–
W. Curtis Green	6	Maurice E. Webb	5
*George Drysdale	1		

Mr. Howard Robertson was appointed to fill the vacancy caused by the lamented death of Mr. Paul Waterhouse.
* Appointed 3 November 1924.

REPORT OF THE ART STANDING COMMITTEE

Nine meetings have been held since the issue of the last Annual Report.

The attendance of members at the seven meetings held during this Session has been as follows :—

Professor S. D. Adshead	2	Cyril A. Farey	1
Sir John J. Burnett, R.A.	2	P. W. Lovell	0
Walter Cave	5	T. S. Tait	0
E. Guy Dawber	2	W. Harding Thompson	4
H. Austen Hall	0	Michael Waterhouse	0
H. V. Lanchester	0	H. P. Burke Downing	6
F. Winton Newman	6	Heaton Comyn	6
Halsey Ricardo	4	Walter Tapper	3
Sir Giles Gilbert Scott, R.A.	0	F. T. Verity	4
Professor F. M. Simpson	3	Maurice E. Webb	3
L. H. Bucknell	6		

The following Officers were elected to serve during the Session under review : Chairman, Mr. Walter Cave ; Vice-Chairman, Mr. Maurice Webb ; Hon. Secretaries, Mr. Winton Newman and Mr. L. H. Bucknell.

Visits to Buildings.—The programme arranged for visits to Buildings during the Session included the following : The Wallace Collection, The Sir John Soane Museum, The Tower of London, Britannic House, Adelaide House, Westminster Abbey (including the Jerusalem Chamber, the Triforium and St. Stephen's Crypt), Ham House.

It was also recommended to the Council that if possible a char-à-banc tour of one of the new Arterial Road Systems should be arranged during the Summer of 1925.

Architecture and Craftsmanship.—The Committee has given lengthy consideration to the reference from the Council regarding the " encouragement of skilled craftsmanship in its relation to Architectural work," and resulting from its recommendation the following series of lectures has been arranged to be given at the R.I.B.A. :—

Subject.	Lecturer.
" Heraldry and Architecture "	Walter H. Godfrey.
" Coloured Carving in Wood and Stone	Laurence Turner.
" Metal Work "	R. L. Rathbone.
" Mural Paintings "	John D. Batten.

The Committee have also recommended that if possible one of the Sessional Papers for 1925–26 should be " the co-operation of the Architect and Craftsman."

The Committee are indebted to Mr. F. R. Hiorns for a studied memorandum on the matter.

Photographic Records of Old Buildings.—In view of the fact that London buildings of past periods and possessing architectural merit are being rapidly demolished, the Committee have given consideration to the desirability of forming and housing at the R.I.B.A. a representative collection of photographs and other records of such buildings.

A Joint Sub-Committee of the Art and Literature Standing Committees was appointed to consider the matter, and it was unanimously agreed that such a collection housed in the R.I.B.A. would be highly desirable, but the lack of Library accommodation and staff, and the cost involved, prevents the proposal being proceeded with at the present time.

For the time being endeavours are being made to secure such catalogues of the records of other interested Societies as are available, and a notice has been inserted in the JOURNAL asking the assistance of Members of the R.I.B.A. in supplying photographs or information of little-known buildings of merit of which no records have been obtained.

It is hoped that in the near future it may be possible to obtain and house in the Library of the R.I.B.A. a representative record of London works of past periods.

Advisory Art Committees.—Regarding the Committee's recommendation dealing with the formation of Advisory Art Committees in the provinces which was approved by the Council last Session and which was circulated among the several Allied Societies, the Committee do not anticipate that any speedy results will be obtained, but from reports and inquiries received it is evident that some interest has been aroused, and the Committee propose to render any assistance in their power to foster the movement.

Waterloo Bridge.—The whole question of the widening or rebuilding of this bridge has been constantly under consideration during the past two Sessions, and the Committee have reported to the Council thereon on more than one occasion.

The Council are now considering the matter in conjunction with other interested Societies.

Richmond Bridge.—In the early part of the Session the Committee had under consideration the proposals of the Richmond Bridge Improvements Committee to widen this bridge, and Mr. L. H. Bucknell and Mr. P. M. Fraser were appointed by the Council to represent the R.I.B.A. at a conference called by the London Society with other interested Societies to consider the matter.

Resulting from the conference, the suggested widening of the bridge has been postponed pending the completion of the bridge for the Chertsey Arterial Road Scheme, when the matter will be reconsidered.

In view of this future reconsideration, the Committee reported its conclusions to the Council, such conclusions being entirely unfavourable to the Richmond Bridge Improvements Committee's proposals.

Albert Bridge.—The design of the new reinforced concrete bridge to replace the Albert Bridge near Windsor has been considered by the Committee, and two members visited the Ministry of Transport in this connection. The design was approved by His Majesty the King in 1915 and therefore no radical change could be made, but certain minor improvements were suggested and adopted by the Authorities concerned.

The whole question of old and new bridges has been constantly before the Committee during the past two Sessions, and, in view of the many widening and rebuilding proposals now rendered necessary to deal with increased traffic all over the country, and particularly in the neighbourhood of London, the Committee take a serious view of the danger of losing many bridges of architectural and constructional merit, and the building of new bridges of a reverse character.

The Council, on the recommendation of the Committee, have urged the Ministry of Transport and others concerned to seek the advice of the Royal Fine Art Commission before embarking upon any new bridge schemes.

It is very satisfactory to note that Colonel Wilfred Ashley has recently impressed on the County and other authorities the necessity for securing proper architectural as well as engineering advice in this connection.

The City Churches.—The Committee have given serious consideration to the Measure of the Church of England Assembly concerning the City Churches now before Parliament, and the Council have approved the Committee's proposal that a short exhibition of photoprints and other records should be arranged at the R.I.B.A. illustrating the Churches.

REPORT OF THE LITERATURE STANDING COMMITTEE

Since the issue of the last Report the Literature Standing Committee has held ten meetings. The attendance of members at the seven meetings held during this Session has been as follows :—

	No. of Attendances.		No. of Attendances.
Louis Ambler	7	E. Stanley Hall	0
W. H. Ansell	3	P. W. Hubbard	4
H. Chalton Bradshaw	5	A. H. Moberly	6
M. S. Briggs	3	S. C. Ramsey	3
L. B. Budden	1	C. E. Sayer	5
Major H. C. Corlette	7	J. Alan Slater	7
C. Cowles-Voysey	3	Charles S. Spooner	4
A Trystan Edwards	1	Arthur Stratton	3
H. M. Fletcher	2	C. H. Townsend	3
D. Theodore Fyfe	3	J. Hubert Worthington	1

The following officers were elected to serve during the Session : Chairman, Major H. C. Corlette ; Vice-Chairman, Mr. C. E. Sayer ; Hon. Secretaries, Mr. A. H. Moberly and Mr. S. C. Ramsey.

Library Accommodation.—The danger of fire and the overcrowding in the Library are still matters of very serious concern to the Committee. To lessen the immediate difficulties until some drastic alterations can be made, several stacks of new shelving have been purchased, and a large number of old engineering and other periodicals, which are hardly ever consulted, have been removed from the Library.

Frames for Drawings.—Twenty frames, with removable backs, have been bought. It is intended to use these for exhibitions of drawings from the Institute Collection from time to time in the Institute galleries.

Drawings of the Houses of Parliament.—Sixteen original drawings of the Houses of Parliament—four of them signed by Sir Charles Barry—have been bought for the Institute collection.

Burlington-Devonshire Drawings.—It was decided during the last Session that these invaluable drawings by Inigo Jones, Webb, etc., should be provided with protective coverings of stout paper to preserve them from possible damage. After very exhaustive enquiries as to the most suitable paper to minimise any risk of discolouring the drawings, a suitable paper has been chosen, and the work carried out.

Copies of Drawings presented to the American Institute of Architects.—The American Institute appealed for the loan of R.I.B.A. drawings by Inigo Jones, Wren, and other famous English architects for the International Exhibitions to be held at Washington and New York. The Committee felt that it would be impossible to part with the original drawings, and very fine photographic reproductions of a number of the drawings have been made by Mr. Emery Walker for this purpose, and copies have been presented to the American Institute.

Etchings by Joseph Pennell and Sydney R. Jones.—Mr. Pennell and Mr. Jones have each presented seven of their etchings to the Institute collection. Some of these have been reproduced in the Institute Journal.

Photographs of Buildings about to be Demolished.—A Joint Sub-Committee of the Art and Literature Committees has considered the possibility of making a photographic record of London buildings of architectural merit which are likely to be demolished. They reported that it was unfortunately impracticable for the Institute to undertake this work at present, but individual members have been invited through the Journal to present photographs of such buildings to the Institute.

Tokyo Imperial University Library.—On the recommendation of the Committee, the Council voted a sum of £30 for the purchase of books as a gift from the Institute to the Tokyo Imperial University Library to help to repair the loss which has been sustained in the great earthquake.

Sessional Papers.—The Committee has made a number of recommendations for sessional papers to be read before the Institute in the next Session.

Loan Library Catalogue.—The Loan Library Catalogue has been brought up to date and reprinted. The cost of printing the Catalogue was defrayed from the Grissell Legacy.

The Librarian reported to the Committee as follows :—

During the twelve months ending 31 March of the present year 210 volumes and 29 pamphlets have been added to the Library, exclusive of periodicals, reports and transactions of Societies and parts of works issued in serial form.

The number of works presented was 35 volumes and 16 pamphlets.

Works purchased numbered 175 volumes and 13 pamphlets, of which 31 volumes were added to the Loan Library.

The attendance of readers in the Reference Library numbered 8,095.

The number of books issued on loan was 4,609.

The number of tickets issued for admission to the Library other than to members of the Institute or to Students or Probationers was 155. The number of books sent through the post was 594.

The principal donations (in addition to those mentioned in the Literature Committee's report) were :

Thirty-four original drawings of Dorchester House by Lewis Vulliamy, presented by Mr. Arthur Stratton [*F.*].

Fifty-one large photographs of Trondhjem Cathedral, presented by Professor Olaf Nordhagen, Hon. Corr. Mem. ; these photographs were exhibited in the Institute Galleries during the Session. The first edition of Tredgold's *Elementary Principles of Carpentry* with Sir Charles Barry's signature, presented by Mr. K. A. Wolfe-Barry, M.Inst.C.E.

A volume on Kedleston Church, presented by the late Marquess Curzon of Kedleston, Hon. Fellow.

Four volumes on Oxford, presented by Mr. Joseph Wells, Vice-Chancellor, Oxford University.

Boyle's *Thames Guide*, presented by Mr. A. O. Collard [*F.*].

Specimens of Gothic Architecture, 4 volumes by John Carter, F.S.A., 1824, presented by Mr. R. M. Hamilton through Mr. A. O. Collard. [*F.*]

Presentations of books were also received from Mr. P. H. Adams [*F.*], Mr. Carl Brummer, Hon. Corr. Mem., Professors Moretti and Annoni, Miss B. Charles [*A.*].

Among the volumes purchased may be mentioned : Aldridge, *The National Housing Manual ;* Barnes, *The Architect in Practice;* Bégule, *Antiquitiés et Richesses d'Art du Département du Rhone ;* Bossert, *Ornament*, two thousand decorative motifs in colour ; Bottomley, *Spanish Details ;* Brice, *The Law relating to the Architect ;* Briggs, *Muhammadan Architecture in Egypt and Palestine ;* Creswell, *The Law relating to Building and Building Contracts ;* Crisp, *Mediæval Gardens with some Account of Elizabethan and Stuart Gardens*, 2 volumes ; Dami, *Il Giardino Italiano ;* Di Nardo, *Farm Houses, small Chateaux and Country Churches in France ;* Eberlein and Regan, *Details of the Architecture of Tuscany ;* Edwards, *Good and Bad Manners in Architecture ;* Embury, *The Dutch Colonial House ;* Filov, *Early Bulgarian Art ;* Hambidge, *The Parthenon ;* James and Yerbury, *Small Houses for the Community ;* Jéquier, *Les Temples Ramessides et Saites* and *Les Temples Ptolémaiques et Romains ;* Jourdain, *English Decoration and Furniture of the Early Renaissance*, 1500—1650 ; Keen, *The Law relating to Public Service Undertakings ;* Lanchester, *The Art of Town Planning ;* Loosjes, *Sprokkelingen in Nederland ;* Manning, *Reinforced Concrete Design ;* Reilly, *Some Architectural Problems of To-day ;* Richardson and Gill, *Regional Architecture of the West of England ;* Rogers, *English Furniture ;* Robertson, *Architectural Composition ;* Royal Commission on Historical Monuments, *Westminster ;* Slothouwer, *Bouwkunst der Nederlandsche Renaissance in Danemarken ;* Stiehl, *Backsteinbauten in Norddeutschland und Danemark ;* Townroe, *Handbook of Housing ;* Townsend, *Measured Drawings of French Furniture from the Collection in South Kensington Museum ;* Walpole Society, *Designs by Inigo Jones for Masques and Plays at Court mainly in the Collection of the Duke of Devonshire ;* Wren Society, Volume 1, *St. Paul's Cathedral*, original Wren Drawings from the Collection of All Soul's, Oxford ; Yerbury, *Old Domestic Architecture of Holland.*

REPORT OF THE PRACTICE STANDING COMMITTEE

Since the publication of the last Annual Report the Committee have held 12 meetings.

The attendance of Members at the 9 meetings held during this Session has been as follows :—

Henry V. Ashley	9	G. Leonard Elkington	6
F. Chatterton	8	H. V. Milnes Emerson	6
Max Clarke	7	J. Douglas Scott	9
G. Hastwell Grayson	5	Herbert A. Welch	7
Francis Jones	4	Charles Woodward	9
Arthur Keen	3	W. H. Atkin-Berry	9
G. H. Lovegrove	8	C. A. Daubney	5
T. R. Milburn	1	Delissa Joseph	7
D. Barclay Niven	8	E. C. P. Monson	8
W. Gillbee Scott	2	Harry Teather	6
Horace Cubitt	7		

The following were elected the Officers of the Committee : Chairman, W. H. Atkin-Berry ; Vice-Chairman, Max Clarke ; Hon. Secretaries, J. Douglas Scott and Henry V. Ashley.

The following Sub-Committees were appointed :—

(*a*) Charges and Contracts.—Max Clarke, Horace Cubitt, H. V. Milnes Emerson, G. H. Lovegrove, E. C. P. Monson, and J. Douglas Scott.

(*b*) Position of Members engaged in Occupations other than that of Architect and Surveyor.—Henry V. Ashley, Max Clarke, G. Leonard Elkington, Arthur Keen, J. Douglas Scott, Charles Woodward and one representative of the Art Standing Committee (Walter Cave).

(*c*) Professional Advertising.—W. H. Atkin-Berry, Henry V. Ashley, F. Chatterton, G. Hastwell Grayson, Delissa Joseph, Arthur Keen, T. R. Milburn, J. Douglas Scott and Harry Teather.

(*d*) Parliamentary.—C. A. Daubney, Delissa Joseph, J. Douglas Scott and W. Gillbee Scott.

(*e*) Law of Ancient Lights.—Max Clarke, Delissa Joseph, T. R. Milburn, J. Douglas Scott, and Charles Woodward.

(*f*) Officials and Private Practice.—Max Clarke, G. Leonard Elkington, H. V. Milnes Emerson, Francis Jones, D. Barclay Niven, J. Douglas Scott and Harry Teather.

(*g*) Minimum Salaries for Architects' Assistants.—Henry V. Ashley, H. V. Milnes Emerson, G. Hastwell Grayson, J. Douglas Scott and Herbert A. Welch.

(*h*) Fees for Reinforced Concrete Work.—Max Clarke, Horace Cubitt, D. Barclay Niven, J. Douglas Scott.

(*a*) This Sub-Committee have held 7 meetings. Their work is referred to hereafter.

(*b*) This Sub-Committee submitted an interim report last Session and have now completed their labours and their recommendations have been approved by the Council.

(*c*) This Sub-Committee have investigated many complaints and have been able to induce the parties concerned to eliminate or modify some of the objectionable features, but much remains to be done in formulating a satisfactory basis for determining the line of demarcation between legitimate publicity and the self-advertisement which has of late been so prominent in the public Press.

(*d*) This Sub-Committee, appointed to watch the interests of the profession in any fresh legislation that might be introduced, have examined and reported upon clauses in the Bills promoted by the Oxford and the Bath Corporations dealing with lines of frontages, approval of design and other architectural and building matters and their reports have been communicated to the Allied Societies concerned by the Council.

(*e*) This Sub-Committee have submitted a report recommending an alteration in the Law of Ancient Lights based on the compulsory acquirement of existing rights and the prevention of acquiring future rights and had the advantage of attending before the Council and explaining their proposals. The Sub-Committee have also explained their proposals at a Conference with representatives of the Law Society and the Surveyors' Institution and received a sympathetic hearing. The Law Society recommended the Architects and Surveyors to agree to the outline for a Bill in Parliament dealing with easements in a comprehensive manner with a view to arranging a Conference for joint action.

(*f*) The recommendations of this Sub-Committee have been approved by the Council and action has been taken in accordance therewith.

(*g*) This Sub-Committee have been in conference with the Architects' and Surveyors' Assistants' Professional Union and have prepared a report. Their recommendations have been submitted to the Allied Societies for their comments which will be analysed and a report submitted to the Council.

(*h*) The Association of Consulting Engineers approached the Committee with regard to this subject and the Sub-Committee met the representatives of that Association in conference. The matter was adjourned pending further information from the Ministry of Health and consideration of the question with the Science Committee.

The representatives appointed at the end of last Session to meet those of the National Federation of Building Trades Employers, with reference to wages slips on Tenders, made recommendations to the Council which were approved and published in the JOURNAL of 28 June 1924.

The Sub-Committee appointed last Session to watch the interests of the profession in regard to the Metropolitan Water Board Regulations have completed their labours.

At the invitation of the Council the Committee made nominations to the undermentioned Committees as follows :—

Housing.—Horace Cubitt, G. Leonard Elkington, E. C. P. Monson and Herbert A. Welch.

Exhibition Joint Committee.—W. H. Atkin-Berry, Henry V. Ashley and D. Barclay Niven.

A pamphlet entitled *The Architect and His Work*, was prepared by a Sub-Committee and finally edited by our late President, Mr. Paul Waterhouse, and arrangements for its publication are under consideration. It is believed that this publication will be found of great benefit to the profession by explaining to the public the reasons for employing an Architect, the various phases of his work and the customs governing his remuneration.

Questions on Copyright drawn up by the Charges and Contracts Sub-Committee and Counsel's opinion thereon were published in the JOURNAL of 6 December 1924 and supply comprehensive information on the subject as affecting architects. The Committee recommended the Council to inform the Board of Trade that it would be desirable to set up a Statutory Register of Copyright under certain conditions

Counsel's Opinion on Clauses in the R.I.B.A. Form of Contract (1909) dealing with payments to Sub-Contractors on the Cases drawn up by the same Sub-Committee, was published with the JOURNAL of 21 February 1925.

The Charges and Contracts Sub-Committee have considered the question of revising the Scale of Charges and the opinion of the Allied Societies has been invited. Several suggestions have been made,

but the consensus of the opinions so obtained, as well as that of the Committee, is that a frequent alteration of the Scale tends to weaken its value and authority; meanwhile the suggestions have been noted for future consideration and a report has been submitted to the Council.

The Committee have given advice and rulings to members and others on the numerous enquiries received relating to matters of professional practice and to the appropriate fees for professional services, and in this connection would recognise the excellent work of the Charges and Contracts Sub-Committee in the necessary investigation thereof. The Committee again desire to emphasise the importance of Architects acquainting their clients at the earliest opportunity with the R.I.B.A. Scale of Charges, as the Courts do not recognise the Scale as binding unless it has been brought to the client's notice before the charges have been incurred.

In accordance with their established practice, the Committee decline to express opinions on *ex parte* statements or on matters that are *sub judice*.

The Committee have been called upon to deal with a large number of cases of alleged unprofessional conduct and too frequent breaches of professional etiquette on the part of members, and after the most careful investigations have made the necessary recommendations to the Council.

Several trade circulars offering commission or discount to Architects have again been brought to the notice of the Committee and successful protests have been made to the offending firms.

The Committee recommended an alteration to the Bye-laws making the Chairmen of the Standing Committees ex-officio members of the Council during their term of office, which was supported by the other Standing Committees and received the approval of the Council. The Committee also supported a proposal from the Science Committee that only two-thirds of the members of the Standing Committees should retire annually.

The question of establishing a Professional Defence Union is under consideration by the Committee.

REPORT OF THE SCIENCE STANDING COMMITTEE

Since the issue of the last Annual Report the Committee have held 9 meetings.

Since the appointment of the present Committee the number of meetings has been 7.

The attendance of members at the 7 meetings held during this Session has been as follows :—

	No. of Attendances.		No. of Attendances.
Robert J. Angel	3	*Francis Hooper	3
R. Stephen Ayling	4	J. H. Markham	3
Hope Bagenal	6	Alan E. Munby	3
P. W. Barnett	5	W. A. Pite	4
T. P. Bennett	4	Edwin J. Sadgrove	2
Herbert T. Buckland	0	Harvey R. Sayer	6
H. W. Burrows	2	H. D. Searles-Wood	5
W. E. Vernon Crompton	7	Professor R. Elsey Smith	2
J. E. Dixon-Spain	0	Digby L. Solomon	4
T. F. Ford	1	Dr. Raymond Unwin	2
J. Ernest Franck	6		

* Absent abroad.

The Officers were elected as follows : Mr. W. E. Vernon Crompton (Chairman) Mr. Digby L. Solomon (Vice-Chairman), Mr. Francis Hooper and Mr. J. Ernest Franck (Honorary Secretaries).

Storage of Timber at the Surrey Commercial Dock.—The conditions under which imported timbers are stored at this Dock was brought to the notice of the Committee by Mr. C. A. Daubney, and in conjunction with him certain members made a visit of inspection.

They reported that the method of storing timber in the open could be improved upon, and that the utmost care should be exercised by Architects in the approval of wrought boarding, and as far as possible they should also be satisfied as to the conditions under which all classes of woodwork have been stored.

The Committee duly reported these recommendations to the Council and suggested that the Port of London Authority be asked to receive a deputation from the Royal Institute of British Architects.

The Council agreed to the suggestion and a deputation consisting of the Chairman and three other members was duly received by Mr. C. F. Torrey, the Chairman of the Dock and Warehouse Committee, with whom were the Rt. Hon. Thomas Wiles, P.C., and Mr. Maskal, Dock and Warehouse Manager.

Mr. Vernon Crompton who spoke, made certain suggestions, and Mr. Torrey in his reply said the Port of London Authority would receive the recommendations in a favourable spirit and advised a course of procedure which is now being followed by the Committee.

The Committee, on behalf of the Institute, wish to express their appreciation of their reception by Mr. Torrey and for the very courteous hearing he gave to the Deputation.

Co-operation between the Building Research Board and the Committee.—This subject, or matters appertaining thereto, have been mentioned in the Annual Report of the Committee during many past years, and it is gratifying to be able to report that progress along definite lines has been made, and we feel sure that the programme of work now in progress by the Building Research Board will be of practical help to all members of the profession.

In this matter the Committee suggested to the Council to ask for representation of the Royal Institute of British Architects on the Building Research Board, and we have the pleasure to report that Mr. Vernon Crompton, in his personal capacity, has been appointed a member of the Board.

The Committee have considered the compilation of an index of scientific and other useful information for reference, but are not pursuing the matter further, as we are now able to report that the Building Research Board have in progress a very comprehensive index comprising all phases of architectural and building activity, with the exception of pure design, æsthetics and the philosophy of architecture.

The Committee asked the Director of the Building Research Board that a copy of the index to date, together with the monthly revisions, be placed in the Library, and we feel sure that all the members of the Royal Institute of British Architects will agree with the Committee that our united thanks are due to Dr. Stradling for his valuable support and aid in this addition to the Library of the Index to the records at the Building Research Station, together with a complete list of the periodicals from which abstracts are made.

Model Specification of Water Pipes and Fittings.—This Specification has been prepared by a Committee appointed by the Minister of Health.

The Committee, having carefully considered the Specification, suggested certain additions and amendments, and decided to report to the Council that this Specification should receive their approval and support, to which the Council agreed.

It is suggested that every member of the Institute obtain a copy of the Specification.

Decay of Stonework.—The attention of the Committee again has been called to this subject by the Society for the Protection of Ancient Buildings, and more particularly in respect of the decay of stonework in the interior of churches caused by the use of gas, either as an illuminant or for the purpose of heating the building.

The Committee are keeping in touch with the S.P.A.B. on this matter and are anxious to obtain evidence, and would be pleased to receive particulars of any particular case to lay before the Stone Preservation Committee appointed bv the Department of Scientific and Industrial Research.

Decimal Coinage and Metric Measures.—The proposals of the Decimal Association were referred to the Committee by the Council, and after consideration it was decided to advise the Council that they could agree with the proposal of the Association that H.M. Government be urged to appoint a Committee to examine and report upon the proposal to divide the shilling into ten, instead of twelve, pence.

And with regard to the second proposal for the reduction of the volume of the Imperial gallon in order to make it equivalent to 4 litres, the Committee recommended the Council that this matter should be dealt with in a similar manner as outlined for the proposal on the Coinage.

The Council have adopted the recommendations of the Committee and duly forwarded them to the Decimal Association.

Standardisation of Building Materials.—The standardisation of certain materials, more applicable to those in use by the Engineering profession, has been carried out by the British Engineering Standards Association.

The Royal Institute of British Architects has certain representatives on that Association, and these representatives have been pressing for the standardisation of further materials used in building, more particularly by the Architect than the Engineer.

The British Engineering Standards Association have held a Conference and it has been decided to set up a Committee to deal with the standardisation of building materials.

Any suggestions which the members of the Institute may have for the standardisation of various fittings or parts of a building can be sent in to the Secretary and submitted by our representatives on this particular Standardisation Committee of the British Engineering Standards Association.

Allied Societies.—These Societies have been circularised by the Committee with a view to collecting as much information as possible on the various subjects of scientific interest to the Architect.

So far the answers to these enquiries have been disappointing, but it is hoped that particulars of some interesting problems may be obtained, so that these can be solved and the particulars given in the JOURNAL for the information of the members.

REPORT OF THE COMPETITIONS COMMITTEE

Since the publication of the last Annual Report the Committee have met on eight occasions. The attendance of Members has been as follows :—

Ansell, W. H.	8	Pite, W. A.	3
Ashley, Henry V.	8	Rees, T. Taliesin	2
*Bagenal, Hope	1	Scott, J. Douglas	5
*Barnes, Major Harry	0	Thomas, Sir A. Brumwell	4
*Cowles-Voysey, C.	3	Thomas, Percy E.	2
Elkington, G. Leonard	2	Welch, Herbert A.	8
Gotch, J. Alfred	0	Wilson, W. G.	7
Guthrie, L. Rome	7	Woodward, Frank	7
Keen, Arthur	2	*Bucknell, L. H.	1
‡Lanchester, H. V.	3	†Warwick, Septimus	2
Newman, F. Winton	5		

* Appointed to the Committee in July 1924.
† Resigned from the Committee in July 1924.
‡ Absent abroad during a portion of the period under review.

The following have been the Officers of the Committee during the Session 1924–1925 : Chairman, Mr. Herbert A. Welch [*F.*] ; Vice-Chairman, Mr. W. A. Pite [*F.*] ; Hon. Secretaries, Messrs. Henry V. Ashley [*F.*] and W. H. Ansell [*F.*].

During the period under review the Committee have dealt with 41 Competitions. Of this number it has been necessary to veto ten owing to the refusal of the promoters to observe the essential Clauses of the R.I.B.A. Regulations. Three Competitions are still the subject of negotiation with the Promoters in the hope of securing necessary amendments to the conditions ; in ten other cases amendments to Conditions originally unsatisfactory have been successfully arranged. In seven cases the Committee had the opportunity of considering sets of Conditions prior to their issue to Competitors.

Australian Federal Parliament Buildings Competition.—The Committee have noted with great satisfaction the settlement of the long standing dispute between the Australian Government and the Federal Council of the Australian Institutes of Architects regarding the abandonment of this Competition. Compensation ranging in amount from £100 to £10 has been paid to all registered Competitors according to the amount of work expended upon the designs submitted. It may be remembered that during the Session 1922–1923 the Council of the R.I.B.A., upon the advice of the Committee, strongly supported the attitude adopted by the Federal Council of the Australian Institutes of Architects in this matter and guaranteed the sum of 100 guineas in the event of litigation proving necessary.

International Competitions.—An endeavour has been made to secure the strengthening of the Regulations for International Competitions, and the Franco-British Union of Architects are now considering the best method of carrying this into effect.

Competitions Overseas.—During the past Session the Committee have been approached by, and have given advice to, the Governments of Queensland and Rhodesia upon the conduct of important competitions which they proposed to promote. Competitions in East Africa, Canada, Malta, and Argentina have also come under review.

Public Buildings.—The Committee were consulted by the Practice Standing Committee upon a resolution which the latter Committee recommended for consideration at a General Meeting to the effect that the design of all public buildings paid for out of public funds should be either the subject of competition or entrusted to a qualified Architect. The Competitions Committee welcomed this Resolution and note with satisfaction that it was passed by a General Meeting on 16 February 1925.

The Committee note with satisfaction the considerable use which is being made by Promoters and their Assessors of the Model Form of Conditions issued by the Institute and are gratified at the increasing number of conditions for competitions which are submitted to the Institute before publication ; by this means difficulties are overcome and friction avoided.

REPORT OF THE R.I.B.A. JOINT REGISTRATION COMMITTEE

One of the terms of the provisional amalgamation agreement of 29 May 1924 between the Institute and the Society of Architects was that the Institute should appoint a Committee to frame and use its utmost endeavours to promote a Registration Bill until it becomes an Act of Parliament, the Committee to consist of an equal number of representatives of the R.I.B.A. and of the Society. Last November, in anticipation of the agreement becoming absolute, this Committee was constituted by the appointment of the following representatives of the bodies. *The R.I.B.A.*—Major Harry Barnes, Messrs. Arthur Keen, G. C. Lawrence, W. Gillbee Scott, J. A. Slater, Percy E. Thomas, and Ian MacAlister, Secretary R.I.B.A. *The Society*—Messrs. E. J. Partridge, N. D. Sheffield, Major C. F. Skipper, H. M. Robertson, A. J. Taylor, Thomas Wallis, and C. McArthur Butler, Secretary of the Society. It was decided by the R.I.B.A. that the Committee should set about its task forthwith and hold its meetings at 28 Bedford Square, and that Mr. McArthur Butler should be asked to act as Secretary of the Committee. The first meeting of the joint Registration Committee took place at 28 Bedford Square on Monday, 15 December 1924, when Major Harry Barnes was appointed Chairman, Mr. A. J. Taylor Vice-Chairman, and Mr. McArthur Butler acting Secretary of the Committee, which proceeded at once to make itself informed on all matters relevant to the subject and to draft a Registration Bill. On the amalgamation agreement becoming absolute in February 1925, following the approval by the King of the new supplemental Charter of the R.I.B.A., Mr. McArthur Butler was formally appointed by the Council of the R.I.B.A. as Secretary of the Registration Committee, which, as all the representatives of the Society thereon have since been transferred to membership of the Institute is, in effect, an Institute Committee.

The Committee meets every month and so far five meetings have been held, with the result that a Registration Bill has been drafted which, after it has been submitted to and approved by Counsel, will be presented to the Institute for their consideration and the Committee will continue actively to pursue and carry the matter further.

The Committee is much indebted to those members of the Institute and of the Society both at home and overseas who have voluntarily supplied the Committee with useful information on the subject.

C. McArthur Butler,
Secretary of the Committee.

REPORT OF THE TOWN PLANNING COMMITTEE

Chairman : Sir Aston Webb.
Vice-Chairmen : Profs. S. D. Adshead, Beresford Pite.
Joint Hon. Secretaries : P. M. Fraser, W. R. Davidge.
The Town Planning Committee have held 5 meetings since March 1924.
The attendance of the members of the Committee has been as follows :—

	No. of Attendances
Professor Patrick Abercrombie	0
Professor S. D. Adshead	1
Robert Atkinson	0
Major Harry Barnes	1
Sir Reginald Blomfield	0
L. H. Bucknell	2
W. R. Davidge	5
Sir Richard Davies	2
T. Raffles Davison	0
F. M. Elgood	2
P. M. Fraser	4
J. Alfred Gotch	0
W. Haywood	2
Arthur Keen	0
H. V. Lanchester	0
H. J. Leaning	2
Sir Edwin Lutyens	0
Sir Henry Maybury (or his deputy)	3
D. Barclay Niven	3
Professor Beresford Pite	0
C. H. B. Quennell	0
W. E. Riley	1
W. H. Seth-Smith	3
Herbert Shepherd	5
Sir John W. Simpson	0
Dr. Raymond Unwin	4
Edward P. Warren	3
Sir Aston Webb	0

Arterial Roads.—The Committee gave further consideration to the subject of Arterial Roads, supporting the proposition that the best architectural advice should be consulted in this connection. The Committee have visited several important developments round London with a view to collecting and co-ordinating valuable data. It is interesting to record that the Ministry of Transport have already in hand in Greater London no less than 27 important arterial road schemes, comprising in all about 165 miles of new roads and 40 miles of widenings, the total estimated cost being over £12,000,000.

St. Paul's Bridge.—Various proposals with regard to St. Paul's Bridge have come up before the Committee from time to time, and the Committee hold a watching brief in this matter, with a view to reporting to the Council any further developments.

London Traffic Act.—The London Traffic Act, which became law during the year, was considered by the Committee with a view to reporting to the Council any action which they think might usefully be taken, and the Committee will follow with interest the proceedings of the London and Home Counties Traffic Advisory Committee which has been established under the Act.

Housing Committee.—The Town Planning Committee's representatives on this Committee were reappointed.

Richmond Bridge.—The Committee were engaged at some length on the matter of old Richmond Bridge, which it was proposed to widen in such a manner as to alter entirely its character and destroy its beauty. The Committee were represented upon a conference arranged by the London Society.

The Committee are happy to report that this proposal has not received official approval and that the Institute are to be notified when the matter is again taken up and the proposed new bridge below Richmond will be under consideration.

River Bank, Richmond.—The Committee investigated and reported upon the proposal to develop land on the river bank immediately above Richmond Bridge for factories and permanent industrial buildings, and have inspected the site and reported to the Council.

Joint Conference on London Bridges.—A joint conference, consisting of representatives of the R.I.B.A., London Society, Town Planning Institute and the Architecture Club, have attended by deputation before the London County Council on the subject of new Thames bridges, and it is satisfactory to note that the construction of Lambeth Bridge is to be proceeded with and that preliminary negotiations are to be undertaken by the L.C.C. with a view to the ultimate construction of a new road bridge at Charing Cross.

Waterloo Bridge.—The joint conference have also submitted to the L.C.C. a strong protest against the threatened demolition of Waterloo Bridge and the L.C.C. have agreed that no executive action for the demolition of the bridge will be taken before July next. This will allow an opportunity for further technical evidence to be received.

Uncontrolled Motor Traffic.—The question of the demolition of buildings of architectural interest and beauty which has been occasioned by the congestion at certain points on main roads, mainly where villages occur, has been considered by the Committee.

Enquiries were made into specific examples in Kent, and the Committee reported to the Council on the matter. A letter was addressed to the Kent County Council and a sympathetic reply received.

Zoning.—The Committee's time during the session has been largely devoted to preparing a report upon Zoning in built-up areas in the administrative County of London. The Committee prepared and sub-

mitted to the Council a full report on the matter which has been forwarded to the L.C.C. who have appointed a special committee to deal with this subject. The L.C.C. have expressed cordial thanks for the report of the Institute.

Development of the Strand.—The Committee considered and reported to the Council on the suggestion for the promotion of a competition by the Royal Institute in connection with the development of the Charing Cross end of the Strand. This report was adopted at the General Meeting held on the first Monday in March last.

The Committee invite communications from members and others interested in town planning and kindred matters in connection with the proposals of local and other authorities which involve the demolition of existing buildings or property of architectural or historical interest, and also proposals for making new and widening existing roads, the construction of bridges, etc., so that they can bring the matters before the proper authorities with a view to obtaining the best results.

REPORT OF THE HONORARY AUDITORS FOR 1924

We have carefully examined the books and checked the various items therein with the accounts and vouchers for the year 1924, together with the various share certificates held by the Institute and the list of share and scrip certificates deposited at the bank, all of which were found to be in order and to agree with the balance sheet prepared by the accountants.

The income for 1924 amounted to £23,191 13s. 1d. and the expenditure to £21,952, leaving a surplus of £1,239 13s. 1d. The income for 1923 was £22, 035 17s. 5d. and the expenditure £20,539 0s. 6d., which left a surplus of £1,496 16s. 11d.

Taking into consideration the fact that very large sums had to be expended in 1924—amounting to £1,529 7s. 10d.—on the International Congress on Architectural Education, and on Amalgamation and Registration (including legal expenses) arising out of the agreement with the Society of Architects, we think the surplus for 1924 may be considered very satisfactory.

In 1923 the fees received from Candidates for the various examinations amounted to £1,940 6s.; whilst in 1924 they amounted to £2,620 16s.—an increase of £680 10s.

In 1923 the amount received for entrance fees was £751 16s., and in 1924 £354 18s.—a decrease of £396 18s. This diminution is principally owing to the cessation of the Special War Examination and the consequent reduction in the number of admissions to the Associate Class.

In 1923 the income derived from Subscriptions of the several classes of Members amounted to £14,931 6s.; and in 1924 to £15,601 4s.—an increase of £669 18s. This is largely due to the satisfactory increase in the amount received for subscriptions in arrears.

The expenditure for salaries has increased by about £260, due to extra assistance engaged during the year.

Decrease in expenditure has occurred, as by comparison with the previous year, on the following items :

(1) Rates and taxes, £28 10s. 6d.; (2) Medals and prizes, £113 2s. 11d.; (3) JOURNAL, £131 6s. 3d.; (4) *Kalendar*, £234 8s. 2d.

The following items show an increase in expenditure :

(1) General printing, etc., £232 17s. 10d.
(2) General meetings and exhibitions, £223 4s. 7d.
(3) Contributions to Allied Societies, £229 10s.
(4) Miscellaneous expenses, £802 15s. 7d.

NOTE.—With regard to the difference between " Increase of Expenditure " over " Decrease " accounts during the year, we again wish to point out that the additional necessary expenses were largely incurred through the International Congress on Architectural Education and Amalgamation and Registration matters, which are previously referred to in our report.

An increased amount of £154 13s. has been received from tenants and for the use of rooms and galleries.

We are pleased to report that the securities held by the Institute on behalf of Trust Funds have again increased in value to the extent of £659 8s. 9d.

We wish to express our appreciation of the careful and judicious manner in which the various items of expenditure have been administered ; and also to the efficient and systematic way in which the books have been kept by the staff of the Institute. This rendered our work as Honorary Auditors both easy and pleasurable.

R. Stephen Ayling [*F.*]
C. E. Hutchinson [*A.*] } *Hon. Auditors.*

THE FINANCES OF THE ROYAL INSTITUTE

The balance sheet and statements prepared by the Accountants and the Report of the Hon. Auditors show the present position of the finances of the Royal Institute.

The estimate of income and expenditure for the year ending 31 December 1924, which was prepared in March 1924, has been justified by results. We expected an income of £21,750 and we received £23,191. We expected to spend £21,150 and we actually spent £21,952. In place of an anticipated surplus of £660 on the year's working we have a realised surplus of £1,239.

In subscriptions and contributions we received £601 more than we anticipated ; in Examination Fees we received £720 more. The expenditure in connection with the unification and registration policy and other legal charges amounted to some £730, as against an anticipated figure of £300, and the Architectural Education Congress cost £895, as against a budget figure of £350. The unexpected success of this event and the wide scope of the Exhibition connected with it accounted for and fully justified the extra cost. The cost of the structural alterations to the premises, amounting to a total of £9,135 1s. 4d., has been met entirely out of ordinary income. It was anticipated that it would be necessary to borrow to meet the greater part of this expenditure, but the financial position warrants the provision of the whole sum from ordinary funds so as not to increase the building debt.

The " Budget " for 1925 has again been prepared on a conservative basis, and we have reason to anticipate a satisfactory financial year. It will be remembered that the increased income arising from the amalgamation of the Society of Architects will not be available until the year 1926.

Harry Barnes, Vice-President,
Chairman of the Finance and House Committee.

Income and Expenditure Account of Ordinary Funds for the Year ended 31st December 1924.

Exclusive of Subscriptions in advance.

Dr. EXPENDITURE.	£ s. d.	£ s. d.	Cr. INCOME.	£ s. d.	£ s. d.
To Ordinary Expenditure—			By Ordinary Income—		
Rent	87 6 10		Subscriptions and Contributions :—		
Rates and Taxes	991 4 6		Fellows	4912 10 0	
Interest on Mortgage	1200 0 0		Fellows' Arrears	298 12 6	
		2278 11 4	Associates	6651 18 6	
Gas and Electric Lighting		203 16 7	Associates' Arrears	681 9 0	
Fuel		115 11 0	Licentiates	2524 17 0	
Salaries, including extra assistance		5943 7 3	Licentiates' Arrears	350 4 0	
Pensions		500 0 0	Reinstated Members	36 4 6	
General Printing, Stationery, Stamps and Petty Expenses		2070 18 5	Students' Fees and Arrears	145 8 6	
General Meetings and Exhibitions		548 2 10			15601 4 0
Housekeeping and Wages		432 5 6	Entrance Fees		354 18 0
Advertisements		58 14 0	Journal and Kalendar—		
Examiners' and Moderators' Fees		200 9 2	Advertisements	1217 10 0	
General Repairs		271 12 8	Sales of Journal and Other Publications	2127 4 1	
Fire Insurance		102 10 1			3344 14
Medals and Prizes		93 14 7	Examination and Other Fees—		
Grants—			Probationers' Registration	1180 4 0	
Architects' Benevolent Society	100 0 0		Intermediate	813 15 0	
Architectural Association	100 0 0		Final	613 4 0	
Books for Tokio University	31 17 6		Town Planning Examination	10 10 0	
British Engineering Standards Association	5 0 0		Statutory	3 3 0	
British Non-Ferrous Metals Research Association	15 0 0				2620 16 0
British School at Rome	100 0 0		Use of Rooms—		
do. (Faculty of Archæology)	3 3 0		R.I.B.A. Tenants and Others	1080 0 0	
Federal Council, South Africa, for Architectural Education	21 0 0		Galleries	169 7 0	
London Survey Committee	11 11 0				1249 7 0
Whitgift Hospital Preservation Fund	4 11 6		Grissell Legacy—		
		392 3 0	Interest on War Loan		20 14 0
Library		391 13 5			
Journal—					
Reporting	71 18 8				
Printing and Binding	2277 7 0				
Illustrations	164 0 7				
Postages and Carriage	1049 16 11				
		3563 3 2			
Kalendar—					
Printing	376 8 0				
Postage and Carriage	112 12 1				
		489 0 1			
Contributions to Allied Societies*		980 9 6			
Miscellaneous Expenses—					
Amalgamation and Registration	501 10 8				
do. Legal Expenses	132 15 0				
Annual Dinner	117 7 8				
Annual Election Enumerators	37 16 0				
British Architects' Conference, Oxford	297 9 8				
"Conditions of Contract" Conference	10 0 0				
Council Dinner Guests	72 10 0				
Hire of Rooms	63 7 0				
Housing Fees Tribunal	84 14 2				
International Congress on Architectural Education	895 2 2				
Legal and Accountants' Charges	104 8 9				
Overseas Examinations	31 0 6				
Presidents of Allied Societies	128 10 0				
Provincial Members of Council	56 3 9				
Rome Scholarship Examination	48 18 10				
R.I.B.A. Visiting Board	96 15 4				
Staff Insurance	190 3 7				
Telephone	60 8 5				
Valuation of Premises	105 0 0				
Sundries	274 15 11				
		3308 17 5			
Annual Charge for Fine payable at Renewal of Lease		7 0 0			
Surplus for the Year		1239 13 1			
Saffery, Sons & Co., Chartered Accountants.		£23191 13 1			£23191 13 1

* Bye-law 81 provides that "The Roya lInstitute shall, in each year, contribute to any Non-Metropolitan Allied Society not more than one-fourth of the annual subscription paid to the Royal Institute by each member thereof who is also a member of such Society, in respect of and for his subscription thereto ; but in no event shall such contribution apply in the case of any one member to more than one Allied Society."

Examined with the vouchers and found to be correct. 1*st April* 1925. { R. Stephen Ayling [*F.*] / C. E. Hutchinson [*A.*] } *Hon. Auditors.*

Balance Sheet of Ordinary Funds, 31st December 1924.

Dr. LIABILITIES.	£ s. d.	£ s. d.	Cr. ASSETS.	£ s. d.	£ s. d.
To Sundry Creditors—			By *Premises*, as at 31st December 1922	89000 0 0	
Sundry	1702 7 11		*Add*—		
Mortgage Interest	39 9 0		*Structural Alterations* during 1923	3357 14 11	
Rent	23 15 6		*Ditto* ,, 1924	5777 6 5	
Mortgage on Freehold and Leasehold Property at 6 per cent.		1765 12 5			98135 1 4
		20000 0 0	*Mortgage Redemption Policy*		1308 1 6
Subscriptions received in Advance		239 15 8	*Investment (Grissell Legacy)*—		
Lieut. Francis Grissell Legacy Fund—			£376 8*s.* 1*d.* 5% War Loan at cost		357 10 6
As at 31st December 1923	500 0 0		*Debtors*—		
Less Expended on Loan Library Catalogue	142 9 6		Rent and Advertisements	1012 10 0	
		357 10 6	Due from Trust Funds	1 6 6	
Scholarship Fund (A. C. Bossom)	1250 0 0		Payments in Advance	152 10 0	
Medal Competition (A. C. Bossom)	100 0 0				1166 6 6
		1350 0 0	*Subscriptions* in Arrear for 1924 and previously		1616 17 0
Reserve for Fine Payable on Renewal of Lease		21 0 0			
Lloyds Bank, Overdraft		2691 6 9			
Surplus of Assets over Liabilities (subject to valuation of premises and realisation of Debtors and Subscriptions in arrear)		76158 11 6			
		£102583 16 10			£102583 16 10

Note.—A Fine of £7 per annum is payable in respect of 9, Conduit Street, under a Lease from the Corporation of the City of London. Notice of renewal must be given at Michaelmas 1935, and the fine for 14 years of £98 paid.

Saffery, Sons & Co.,
Chartered Accountants.

Examined with the vouchers and found to be correct. 1*st April* 1925. { R. Stephen Ayling [*F.*] / C. E. Hutchinson [*A.*] } *Hon. Auditors.*

Revenue Accounts of Trust Funds for the Year ended 31st December 1924.

Dr.

Ashpitel Prize Fund:—

	£	s.	d.
To Prize Awarded to E. H. Button [*A.*]	10	0	0
To Balance carried forward	47	18	6
	57	18	6

Anderson and Webb Fund:—

	£	s.	d.
To R.I.B.A. Scholarships at Cambridge University School of Architecture:—			
Norah Aiton	35	0	0
Edward le Bas	35	0	0
To Balance carried forward	598	16	2
	668	16	2

Arthur Cates Legacy:—

	£	s.	d.
To Purchase of £200 13s. 10d. 4% Funding Loan 1960/90	177	8	2
To Balance carried forward	52	17	9
	230	5	11

Archibald Dawnay Bequest:—

	£	s.	d.
To Amount paid to G. A. Burnett	20	0	0
To Amount paid to R. H. Turner [*A.*]	8	0	0
To Amount paid to A. E. Cameron	17	0	0
To Amount paid to J. R. Erith	20	0	0
To Amount paid to A. C. Todd	20	0	0
To Balance carried forward	400	14	7
	485	14	7

Donaldson Testimonial Fund:—

	£	s.	d.
To Balance from last Account	0	19	10
To Cost of Medal	2	7	6
	3	7	4

Donation Fund:—

	£	s.	d.
To Transfer to Anderson and Webb Fund	500	2	1
	500	2	1

Godwin Bursary:—

	£	s.	d.
To Amount paid to W. T. Benslyn [*A.*]	22	0	0
To Balance carried forward	14	19	6
	36	19	6

Grissell Legacy:—

	£	s.	d.
To Balance from last Account	20	15	6
	20	15	6

Owen Jones Studentship:—

	£	s.	d.
To Amount paid to C. F. Filbey	35	0	0
To Amount paid to J. H. Sexton	66	0	0
To Balance carried forward	247	9	10
	348	9	10

Pugin Memorial Fund:—

	£	s.	d.
To Amount paid to A. N. Thorpe	25	0	0
To Balance carried forward	48	12	11
	73	12	11

Saxon Snell Bequest:—

	£	s.	d.
To Balance carried forward	94	0	10
	94	0	10

Tite Legacy Fund:—

	£	s.	d.
To Balance from last Account	58	7	8
To Amount paid to G. H. G. Holt	30	0	0
	88	7	8

Wimperis Bequest

	£	s.	d.
To Amount paid to W. T. Benslyn [*A.*]	22	0	0
To Balance carried forward	29	19	4
	51	19	4

Herbert Baker Scholarship Fund:—

Henry Jarvis Studentship Account:—

	£	s.	d.
To Amounts paid to British School at Rome:			
For E. Williams [*A.*] 1923 Student	250	0	0
For M. A. Sisson 1924 Student	250	0	0
To Balance carried forward	47	1	0
	547	1	0

Henry Jarvis Studentship at the A.A. Account:—

	£	s.	d.
To Amount paid to J. W. Wood	35	0	0
To Amount paid to F. L. Preston	15	0	0
	50	0	0

Henry Jarvis Ex-Service Travelling Scholarship Account:—

	£	s.	d.
To Amount paid to 16 Students	625	0	0
	625	0	0

Cr.

Ashpitel Prize Fund:—

	£	s.	d.
By Balance from last Account	39	3	8
By Dividends and Interest received	18	14	10
	57	18	6

Anderson and Webb Fund:—

	£	s.	d.
By Balance from last Account	129	18	2
By Dividends and Interest received	38	15	11
By Transfer from Donation Fund	500	2	1
	668	16	2

Arthur Cates Legacy:—

	£	s.	d.
By Balance from last Account	177	8	2
By Dividends and Interest received	52	17	9
	230	5	11

Archibald Dawnay Bequest:—

	£	s.	d.
By Balance from last Account	254	7	11
By Dividends and Interest received	231	6	8
	485	14	7

Donaldson Testimonial Fund:—

	£	s.	d.
By Dividends and Interest received	2	13	1
By Balance carried forward	0	14	3
	3	7	4

Donation Fund:—

	£	s.	d.
By Balance from last Account	29	4	5
By Dividends and Interest received	4	4	4
By Proceeds of Sale of 400 War Savings Certificates	466	13	4
	500	2	1

Godwin Bursary:—

	£	s.	d.
By Balance from last Account	2	5	0
By Dividends and Interest received	34	14	6
	36	19	6

Grissell Legacy:—

	£	s.	d.
By Dividends and Interest received	14	12	6
By Balance carried forward	6	3	0
	20	15	6

Owen Jones Studentship:—

	£	s.	d.
By Balance from last Account	229	1	2
By Dividends and Interest received	119	8	8
	348	9	10

Pugin Memorial Fund:—

	£	s.	d.
By Balance from last Account	34	15	8
By Dividends and Interest received	38	17	3
	73	12	11

Saxon Snell Bequest:—

	£	s.	d.
By Balance from last Account	63	16	4
By Dividends and Interest received	30	4	6
	94	0	10

Tite Legacy Fund:—

	£	s.	d.
By Dividends and Interest received	27	18	2
By Balance carried forward	60	9	6
	88	7	8

Wimperis Bequest

	£	s.	d.
By Balance from last Account	15	12	2
By Dividends and Interest received	36	7	2
	51	19	4

Herbert Baker Scholarship Fund:—

	£	s.	d.
By Balance as last Account	62	10	0

Henry Jarvis Studentship Account:—

	£	s.	d.
By Balance from last Account	47	1	0
By Amount received from Trustees	500	0	0
	547	1	0

Henry Jarvis Studentship at the A.A. Account:—

	£	s.	d.
By Amount received from Trustees	50	0	0
	50	0	0

Henry Jarvis Ex-Service Travelling Scholarship Account:—

	£	s.	d.
By Amount received from Trustees	625	0	0
	625	0	0

Saffery, Sons & Co.,
Chartered Accountants.

Examined with the vouchers and found to be correct. 1*st April* 1925. { R. Stephen Ayling [*F.*] / C. E. Hutchinson [*A.*] } *Hon. Auditors*

Balance Sheet of Trust Funds, 31st December 1924.

Dr.

	Value 31st December, 1924. £ s. d.	£ s. d.
To Ashpitel Prize Fund :—		
Capital—£305 1*s.* 8*d.* New South Wales 6% Inscribed Stock, 1930/40	317 5 9	
Revenue Investments—		
£76 8*s.* 11*d.* 4½% War Loan, 1925/45	74 6 11	
£20 5% War Loan, 1929/47	20 6 0	
£10 5% National War Bonds, 1928	10 12 6	
£20 4% Funding Loan, 1960/90	17 18 0	
Balance at credit of Revenue Account	47 18 6	
		488 7 8
To Anderson and Webb Fund (Board of Architectural Education) :—		
Capital—£594 18*s.* 4*d.* New South Wales 6% Inscribed Stock, 1930/40	618 14 3	
£58 6*s.* New South Wales 4% Inscribed Stock, 1942/62	50 2 9	
Revenue Investments—		
£56 6*s.* 4*d.* 4½% War Loan, 1925/45	54 15 5	
£25 5% War Loan, 1929/47	25 7 6	
£25 4% National War Bonds, 1927	25 1 3	
£10 5% National War Bonds, 1927	10 12 6	
£30 4% Funding Loan, 1960/90	26 17 0	
Appropriated from Donation Fund—		
£76 8*s.* 11*d.* 4½% War Loan, 1925/45	74 6 11	
£40 5% War Loan, 1929/47	40 12 0	
Balance at credit of Revenue Account, including amount transferred from Donation Fund Revenue Account	598 16 2	
		1525 5 9
To Arthur Cates Legacy Fund :—		
Capital—London and North Eastern Railway—		
£580 4% 1st Preference Stock	475 12 0	
£580 4% 2nd Guaranteed Stock	475 12 0	
Revenue Investments—		
£137 18*s.* 7*d.* 4½% War Loan, 1925/45	134 2 9	
£50 4*s.* 11*d.* 5% War Loan, 1929/47	51 0 1	
£100 5% National War Bonds, 1927, 1928 and 1929	105 19 0	
£200 13*s.* 10*d.* 4% Funding Loan, 1960/90	179 12 5	
Balance at credit of Revenue Account	52 17 9	
		1474 16 0
To Archibald Dawnay Bequest :—		
Capital—£11,026 17*s.* 9*d.* 2½% Consols	6340 9 2	
Revenue Investments—		
£544 19*s.* 7*d.* 2½% Consols	313 7 3	
Balance at credit of Revenue Account	400 14 7	
		7054 11 0
To Donaldson Testimonial Fund :—		
Capital—£72 London Midland and Scottish Railway 4% Preference Stock	59 0 10	
Revenue Investments—		
£12 4*s.* 7*d.* 4½% War Loan, 1925/45	11 17 9	
	70 18 7	
Balance at Debit of Revenue Account	14 3	
		70 4 4
To Donation Fund :—		
Revenue Investments—		
£76 8*s.* 11*d.* 4½% War Loan, 1925/45	74 6 11	
£40 5% War Loan, 1929/47	40 12 0	
Appropriated to Anderson & Webb Fund	114 18 11	
Balance at credit of Revenue Account appropriated to Anderson & Webb Fund	500 2 1	
To Godwin Bursary Fund :—		
Capital—£1,030 London Midland and Scottish Railway 4% Debenture Stock	865 4 0	
Revenue Investments—		
£25 5% War Loan, 1929/47	25 7 6	
50 War Savings Certificates	50 0 0	
£40 5% National War Bonds, 1927/28	42 10 0	
Balance at credit of Revenue Account	14 19 6	
		998 1 0
To Grissell Legacy Fund :—		
Capital—£20 0*s.* 8*d.* "B" Annuity G.I.P. Railway	350 11 8	
Revenue Investments—		
£20 7*s.* 8*d.* 4½% War Loan, 1925/45	19 16 3	
£20 5% War Loan, 1929/47	20 6 0	
£30 5% National War Bonds, 1928/29	31 16 0	
	422 9 11	
Balance at debit of Revenue Account	6 3 0	
		416 6 11
To Owen Jones Studentship Fund :—		
Capital—£1,330 London Midland and Scottish Railway 4% Debenture Stock	1117 4 0	
£1,247 Great Western Railway 5% Consolidated Guaranteed Stock	1290 12 11	
Revenue Investments—		
£398 16*s.* 8*d.* 4½% War Loan, 1925/45	387 17 6	
£44 6*s.* 4½% War Loan, 1925/45	43 1 7	
£107 9*s.* 6*d.* 5% War Loan	109 1 9	
50 War Savings Certificates	50 0 0	
£40 5% National War Bonds, 1927/28	42 10 0	
£75 4% National War Bonds, 1927/28	75 3 9	
Balance at credit of Revenue Account	247 9 10	
		3363 1 4
Carried forward		£15390 14 0

Cr.

	£ s. d.	£ s. d.
By Government and other Securities, being total of Trust Funds invested, as valued 31st December 1924		17749 4 9
By Cash at Bank		
On Deposit	800 0 0	
On Current Account	779 0 2	
	1579 0 2	
Less due to Ordinary Funds	1 6 6	
		1577 13 8
Carried forward		£19326 18 5

BALANCE SHEET OF TRUST FUNDS—*continued.*

Dr.

	£ s. d.	£ s. d.
Brought forward ..		15390 14 0
TO PUGIN MEMORIAL FUND :—		
Capital—£1,070 London Midland and Scottish Railway 4% Preference Stock..	877 8 0	
Revenue Investments—		
£15 9*s.* 9*d.* 4½% War Loan, 1925/45	15 1 3	
£47 16*s.* 5% War Loan, 1929/47.....	48 10 4	
£40 5% National War Bonds, 1927/28 ..	42 10 0	
£50 4% Funding Loan, 1960/90.....	44 15 0	
Balance at credit of Revenue Account....	48 12 11	
		1076 17 6
TO SAXON SNELL BEQUEST :—		
Capital—£698 4*s.* New Zealand 3½ per Cent. Stock	593 9 5	
Revenue Investments—		
£204 10*s.* 4*d.* 4½% War Loan, 1925/45 ..	198 17 10	
£56 14*s.* 4*d.* 5% War Loan, 1929/47	57 11 4	
£40 5% National War Bonds, 1927/28 ..	42 10 0	
Balance at credit of Revenue Account ..	94 0 10	
		986 9 5
TO TITE LEGACY FUND :—		
Capital—£1,150 2½ per Cent. Consols.....	661 5 0	
Revenue Investments—		
£51 12*s.* 6*d.* 4½% War Loan, 1925/45....	50 4 1	
£61 4*s.* 6*d.* 5% War Loan, 1929/47.....	62 2 10	
£30 5% National War Bonds, 1927/28 ..	31 17 6	
	805 9 5	
Balance at debit of Revenue Account.....	60 9 6	
		744 19 11
TO WIMPERIS BEQUEST :—		
Capital—£1,024 18*s.* 8*d.* Metropolitan Water Board 3 per Cent. "B" Stock....	676 9 2	
Revenue Investments—		
£202 3*s.* 5*d.* 4½% War Loan, 1925/45	196 12 3	
£71 14*s.* 4*d.* 5% War Loan, 1929/47	72 15 10	
£40 5% National War Bonds, 1927/28 ..	42 10 0	
Balance at credit of Revenue Account....	29 19 4	
		1018 6 7
TO HENRY JARVIS STUDENTSHIP.....		47 1 0
TO HERBERT BAKER SCHOLARSHIP		62 10 0
		£19326 18 5

Cr.

	£ s. d.
Brought forward .	19326 18 5
	£19326 18 5

SAFFERY, SONS & Co.,
Chartered Accountants.

Examined with the vouchers and found to be correct. 1*st April* 1925. { R. STEPHEN AYLING [*F.*] / C. E. HUTCHINSON [*A.*] } *Hon. Auditors.*

Rough Estimate of Income and Expenditure of Ordinary Funds for the year ending 31st December, 1925 :—

ORDINARY EXPENDITURE.	£ s. d.	£ s. d.
Rent, Rates and Taxes, etc.		2300 0 0
Gas and Electric Lighting		200 0 0
Fuel		115 0 0
Salaries		6400 0 0
Pensions and Compensation		1413 0 0
General Printing, Stationery, Stamps and Petty Expenses ..		2100 0 0
General Meetings and Exhibitions		350 0 0
Housekeeping and Wages		450 0 0
Advertisements		60 0 0
Examiners' and Moderators' Fees		220 0 0
R.I.B.A. Visiting Board.....		100 0 0
General Repairs.....		250 0 0
Fire Insurance		100 0 0
Medals and Prizes		365 0 0
Grants		400 0 0
Library		360 0 0
The Journal		3800 0 0
The Kalendar		660 0 0
Contributions to Allied Societies		1000 0 0
Presidents of Allied Societies		120 0 0
Travelling Expenses of Provincial Members of Council		60 0 0
Legal and Accountants		100 0 0
Miscellaneous, including the following :	£ s. d.	
Council Dinner Guests	100 0 0	
Telephone	60 0 0	
Newcastle Conference.....	200 0 0	
Annual Dinner.....	110 0 0	
Annual Election Enumerators	40 0 0	
Rome Scholarship Examination	50 0 0	
Examinations Overseas	50 0 0	
Charter and Bye-Laws	150 0 0	
Staff Insurance	200 0 0	
Sundries	350 0 0	
		1310 0 0
Annual Charge for Fine payable at Renewal of Lease		7 0 0
Estimated Surplus.....		910 0 0
		£23150 0 0

ORDINARY INCOME.	£ s. d.
Subscriptions and Arrears (Paid).....	15500 0 0
Entrance Fees	400 0 0
Sale of Publications	2200 0 0
Advertisements	1250 0 0
Examination Fees	2700 0 0
Rent and Use of Rooms.....	1100 0 0
	£23150 0 0

Wages in the Building Trade

SCHEME FOR THE PAYMENT OF WORKERS IN BAD WEATHER

An interesting scheme for the payment of workmen in the building trade in bad weather which would remove an outstanding grievance in labour troubles was outlined in the following letter in *The Times* on April 23 :

" For some time a group of architects have been investigating the difficulties which have been more or less continual in the building industry. We have talked with master builders, trade union officials, and men, giving particular attention to one of these difficulties, which at the present time, owing to the sense of grievance which it causes, is greatly hindering good building—the stoppage of pay when work is stopped by bad weather.

" Hitherto neither master builders nor trade union leaders have produced any acceptable solution. But this has been successfully done, so far as his men are concerned, by one builder in London. He employs some 75–100 men, of whom those engaged mainly on outside work, such as bricklayers and slaters, are chiefly affected. He finds that to pay his men 1s. per hour when bad weather prevents work involves a cost of 3d. per week for every man employed, or 13s. per year—an almost negligible amount.

" The scheme was started on an experimental basis, by joint contributions of 6d. per week from every man employed and 3d. per week per man from the employer. After more than two years' working it has been found that the 6d. per week has been unspent, and has been returned to the men to give them an annual holiday with pay, the 3d. covering all the time lost during bad weather, except the first two hours in each week. We enclose particulars of the scheme and the name of the contractor, with permission to publish them if you think it of sufficient interest to do so. (*See below.*)

" We believe this to be the first time this particular question has been put to the test of experiment and statistics, and we are convinced that with co-operation on both sides the grievance—a real one—of no pay during bad weather can and should be solved. That one employer has done so at so small a cost over a period of more than two years, including a spell of unusually bad weather, is an indication of what can be done, and we feel that it is intolerable from every point of view that this cause of friction should continue to exist.

We are, Sir, yours faithfully,
HENRY M. FLETCHER.
E. STANLEY HALL.
EDWARD MAUFE.
GILES GILBERT SCOTT.
J. ALAN SLATER.
MICHAEL WATERHOUSE.
MAURICE E. WEBB."

PARTICULARS OF THE WAGES SCHEME

R Dixon and Sons, Park Walk, Chelsea.

Details of Wet Weather Fund or Wages Adjustment Fund, begun November 6, 1922 :—

Amount paid in up to March 7, 1925.

Employees 6d. per week per man ..	£159	11 2
Firm 3d. „ „ ..	79	15 7
	£239	6 9

Amount paid out to March 7, 1925.

Wet weather	£54	14 10
Holidays	166	2 4
	220	17 2
Balance in hand	£18	9 7

Work during this period having been so arranged that loss of time through wet weather was reduced to a minimum, the Fund accumulated to such an extent that when Bank Holidays came round the men were able to have two or three days' holiday, at least once a year, and yet draw their pay from the Fund to the extent of 1s. 6d. per hour, irrespective of their trade. This enabled them to get away with their wives and families for a change which, in the ordinary course of a working-man's life, is impossible.

Among the rules of the Fund are the following clauses :—

" Payment will not be made for lost time which amounts to less than two hours in any one week, and only those employees leaving off work on the instructions of the foreman will come into the scheme. It is understood that the firm will endeavour to provide work in shelter as far as possible, and give reasonable facilities for drying clothes, so that work may be resumed more quickly when rain ceases."

" Payment will be made at the flat rate of 1s. per hour for all grades and trades as far as the Fund permits, always allowing for a reserve of £5 in the Fund."

The Principles of Architectural Composition*

BY PROFESSOR A. E. RICHARDSON [*F.*]

The subject of building is so vast and so comprehensive in its bearings as to include nearly all branches of science and art. Every book which has been produced up to the present, whether compiled on historical or theoretical lines, has had one object, and one only in view, namely, the spreading of a knowledge of the building art. Some authors have selected certain phases of history because of distinctions which, to their minds, fitted the conditions of the moment. Others have sought to point out the peculiar merits of types of buildings and yet others have written in general terms dealing with results without going deeply into an analysis of cause and effect. No consideration of building, however treated, is complete without reference to development, hence it is that writers on theory usually find the utmost difficulty in marshalling facts and relating the past to the present. In the foregoing is to be seen an explanation, if any is necessary, of the lack of an authoritative treatise on the subject of principles of design, for the view-point is constantly being subjected to changes over which the architect has little control. To ignore precedent would be too revolutionary ; to include the myriad types of historical buildings would defeat its own purpose. Therefore in a work of this nature the wisdom of a middle course is the surest and most direct alternative.

The art critic has lately taken upon himself the task of writing about architecture in the same general way that he has for years given gratuitous advice to painters and sculptors. He has discovered that architecture is an art, but the scientific aspect of the subject is something he cannot understand, and it can be imagined that superficial knowledge without training often misses the issue.

Mr. Howard Robertson as a practising architect is in a more advantageous position, for he takes the line that composition in architecture is susceptible of analysis and his viewpoint, while essentially modern, is international in its breadth. He has been influenced by his studies in Paris as well as by the opinions of such writers as Mr. Trystan Edwards and has referred to many other authorities. The book is catholic in its arrangement. There are twelve chapters, illustrated by a number of sketches showing elevations, plans and details, with a list of works of reference. The first chapter deals with " The Consideration of Unity," summarised by a well-intentioned aphorism. " In effect, it is a golden rule in proportion that there must be no hesitation or weakness." Chapter two, a short one, deals with " The Composition of Masses." In this figures 31 and 32, page 29, demonstrate the American theory of piling Pelion on Ossa. Chapter three treats of " The Element of Contrast," and among other illustrations shows the Palazzo Communale, Siena, the west front of Wells Cathedral, the San Carlo Theatre at Naples and the reconstruction of a room in a Swiss house at Zurich. Chapter four deals with " Contrast in Form and Mass," and shows, as examples, a Cubist design for the Scottish Rite building at Oregon, the Einstein House at Potsdam and a country house in Berkeley, California, as well as the strange reinforced concrete and glass design by Walter Gropius and Adolf Meyer for the Chicago Tribune building. Chapter five treats of " Secondary Principles." There are illustrations of the Roi Soleil, by Puget, and a design by a Dutch student for a " People's Hall," which shows a tendency to " dehumanise" architecture. In chapter six " The Expression of Character in Design " is analysed, and many sketches showing modern eclecticism are contrasted, ranging from the winning design by Howells and Hood for the Chicago Tribune building to a house of French origin by John Russell Pope. Chapter seven, " Dealing with Proportions in Detail," is largely a *résumé* of facts investigated during the last century, ranging upon observations made by Durand, Gwilt, Guadet and others, as well as the author's own review of the theory of elemental proportions. There is much sound argument in chapter eight, which deals with " Scale." It is unfortunate that the new extension of the Selfridge Store was selected to open this chapter, for, owing to difference of levels, the ordonnance appears too heavy for the basement storey. Chapter nine, dealing with " Composition in Plan," is the most valuable part of the book. Here the author is on less debatable ground and while his preference is for the " monumental " type of plan, he finds space to include a few useful " domestic " examples. In chapter ten, " The Relation between Plan and Elevation " is considered. " An analogy is that between the covering of the body and its internal structure and organs, which, while not expressed in detail on the exterior, dictate nevertheless the general contours of the human form." Chapter eleven is a discourse on " The Expression of Function," in other words, it treats of " suitable architectural expression for buildings devoted to various purposes." At this stage Mr. Robertson makes the admission that such buildings are " to a large extent independent of rules of abstract

**The Principles of Architectural Composition.* By Howard Robertson, S.A.D.G., M.S.A. Foreword by Robert Atkinson, F.R.I.B.A. [London: The Architectural Press, 9, Queen Anne's Gate, Westminster, S.W.1 1924. Quarto. 10s. 6d. net.]

composition." It can, however, be pointed out that in vital building no such abrupt distinctions should have a place, otherwise architecture or building would fall into the two groups of Decoration and Utility, with most damaging results, as can be adjudged from some examples of modern practice. The grain elevator at Montreal and the grain silo at Dublin are both as interesting as examples of dramatic expression as any works of "stylistic character." Earlier in the work, to be precise, on page 40, Mr. Robertson states that "Structural, logical and truthful expressions do not, of course, automatically endow a building with the attribute of beauty, but merely satisfy a sense of fitness and invite an emotion of a totally different kind from that produced by beauty of form. This statement is somewhat curious, for the term "structure" in its truest interpretation means structure of plan, elevation, and section. Moreover, the book in all its pages implies the correlation of the one with the other. The completeness of Sir Giles Gilbert Scott's design for Liverpool Cathedral, the Stadhuis at Stockholm, and many of the excellent houses at Welwyn, are mainly noticeable for their structural qualities. There should be no divorcement between structural entity and artistic expression if architecture is to be a living art. Too much emphasis has been given in the past to the decorative side at the expense of building unity. To-day when there is so much talk of a "modern style," the issue is further confused by thinking in terms of form, often brutal, without regard to the poetic qualities which are never missing in old work. Mr. Robertson makes this point several times in his book, but he shows a little hesitancy in his arguments, as though he doubted whether the thing could be accomplished.

The Appendix, chapter twelve, consists of "Hints to Students on the Architectural Programme and a Method of Working." The author says, "Many architects are the fortunate masters of a definite system of procedure, and are in a position to impart valuable hints on the subject, but few of these hints have ever been put down in black and white." From this it can be gathered that his book is primarily intended for students, but it is only fair to say that many architects would benefit by a study of its contents. This work is the first of its kind to appear in this country, although it is rumoured that other books of a similar character are in the Press.

Mr. Robertson deserves full recognition for the uncommon service he has rendered to architects by compiling this treatise. He does not indulge in extravagant views, his statements are concise and give food for reflection, and the chapters have the merit of brevity. The argument, as developed by the sketches, is somewhat alarming in showing the eclectic tendencies of the moment, but there is every indication of a virile purpose which must be acknowledged, for at all times art in this country has been open to ideas from abroad. The French, whose traditions are so strong, have never been opposed to rational development. This accounts for the sequential character of the French vernacular and the suppression of any bursts of enthusiasm which showed a brutalising tendency. Lately an eminent French authority defined originality as "intelligent evolution," and on such lines the improvement of design in building will go.

Reviews

AN INVENTORY OF WESTMINSTER ABBEY. *Royal Commission on Historic Monuments. London, Vol. I. Westminster Abbey*, 1924.

This *Inventory* is a survey of the Abbey Church and other buildings, consisting of about 140 pages of closely printed text, 220 photographic plates, some figures in the text, and a large folding plate of the plan. The work of highly trained observers, carried through in a thorough and systematic way, it is already indispensable as a book of reference and will in the future be of inestimable value as a full record of what was existing at this time. Many of the plates contain several subjects and there must be four or five hundred photographs reproduced. The Introduction is by that great mediævalist, Dr. M. R. James, the Provost of Eton. The index seems perfect. It is so complete that it is a sort of interesting puzzle game to find out if anything has been passed over without notice. And I should not like to commit myself to saying that there was any omission of a fact coming within the scope of the book. A correspondent, however, tells me that he cannot find any reference to the original roof of carpenter's work, but the mistake may be his. The point is only noted to call attention to it in view of the probability of there being a new edition.

I believe this fine volume has had the success it deserves and that a new edition is likely to be published soon and that there will be some additional matter. Might I venture to make the suggestion that, if such additions are of any importance, a summary of them should be printed on a slip so that those who have the book in its first form may obtain an indication of what the corrections and extensions are? Little discoveries are frequently being made and doubtless there will be further editions of the *Inventory*.

The most recent work of cleaning done in the church is of the walls and tombs in St. Edmund's Chapel—the first on the right opening from the apsidal ambulatory. Here, within the last week (10–17 March) we have found that the fine sculptures of the spandrils of the wall arcade were gilt—they consist mainly of foliage in high relief undercut, and some figures—on a

brilliant red ground. Traces of similar red in the recesses of the carved caps show that these were also of gold and red, and red also appears on some of the arch mouldings. We thus, by a few stains, gain evidence for the colour decoration of this important wall arcade which surrounded all the eastern chapels. Associating this new evidence with what was known before of the " lining out " of the wall surfaces and gilding of bosses, vaulting-ribs, and window capitals, we obtain an almost complete knowledge of the general colour decoration of the whole interior. In this same chapel the tomb of Sir Bernard Brocas, with its fine knightly effigy, has been cleaned and this brings out its full authenticity, which had been doubted.

W. R. Lethaby.

THE EARLY DOMESTIC ARCHITECTURE OF CONNECTICUT. *By J. Frederick Kelly, A.I.A. New Haven : Yale University Press. London : Humphrey Milford. Oxford University Press.* 1924.

The architecture herein illustrated and described is timber architecture, and the author claims it to be the legitimate descendant of the " half-timbered " house that prevailed in this country and elsewhere until superseded by brick. And there can be no radical distinction made between a house constructed entirely of wood and one in which the timbers are restricted to the framing, while the interstices are filled with whatever may be convenient. No such distinction was made in early days, although the term half-timber would seem to convey one, and has done so to the compilers of dictionaries. The French " Pan-de-Bois " comprised both procedures, and the most reasonable inference is that the term half-timber described a scantling in distinction to a timber or baulk, as it still does in the shipyards, if Webster is herein correct. Mr. Sidney Addy, in his excellent little book on " The Evolution of the English House " some years since, characterised " half-timbered " as a " misleading term." However, the old manner had virtually come to an end before the American era, with the exception of barns, sheds, and the least important type of dwelling house. The stability of a homestead no longer depended upon the framing of crutches sills and heads, when its character was estimated at so many bays or distance between the forks and the roof was the dominating constructive feature, with much of the accommodation contained within it. A host nevertheless still offers shelter beneath his roof rather than within his walls.

Before the close of the seventeenth century the radical conception of the roof tree had gone, and the natural evolution of the house, which had centred around it. The wall became of first importance and the roof merely a covering. In its simplest form, a house became a box with a lid, and it is along such lines that the American timber house is constructed. It is a house in the Dutch manner with sash windows, but weather-boarding takes the place of brick and boards or shingles the place of tiles. Still, the soundness of its construction and material—always oak in the best period, and the frankness of its expression, where axe-dressed anglepost and beam give their dignity to an interior devoid of plaster covering, justify an ancestral claim.

In his humble habitation the early settler followed the plan of his forefathers. The house-part and adjoining chamber, with an out-shot behind and a central chimney stack, is an ancient plan. But the staircase, contained in a lobby or " trance " as you enter, marks an age when rooms had ceased to be passage-ways. The extreme uniformity which the exterior of the smaller house displays with a certain monotony of line imparted by the weather-boards, is often enlivened in the more pretentious examples by jalousies to the windows and a porch or doorway of charming Georgian design.

The illustrations, of which the book largely consists, comprise both drawings of representative houses and complete details, and although under modern building conditions there can be but little prospect of their future utility, they furnish a careful record of a period of architectural expression which should appeal not only to the citizen of the United States, but to the humble citizen of the world. C. J. Tait [*F.*].

EXAMPLES OF SCOTTISH ARCHITECTURE FROM THE TWELFTH TO THE SEVENTEENTH CENTURY. *A Series of Reproductions from the National Art Survey Drawings, published by a joint Committee of the Board of Trustees for the National Galleries of Scotland and the Incorporation of Architects in Scotland. Edited by Thomas Ross, LL.D., and Sir Robert Lorimer, A.R.A., R.S.A.*

This portfolio of 63 very clearly reproduced architectural plates is, like the Architectural Association's Sketch Book, from measured drawings by various architects, one or two drawn 100 years ago, and none more recent than 1907. The plates give plans and details, more or less fully, of eleven very interesting, if somewhat unfamiliar, Scottish churches, castles, houses, etc., with an introductory description to each one.

The drawings themselves are carefully and clearly drawn, and some of them, such as those by Mr. Hervey Rutherford, are excellent.

All the perspectives are seemingly by Mr. Ross, and are a little hard, but they, and the plans, etc., no doubt faithfully record the buildings and details as then seen.

There are some very useful details of wrought iron fittings, ceilings, windows, crosses, sedilia, etc., and Plate 53 illustrates several masons' marks at Crossraguel Abbey, and it is very interesting to consider the elaborateness of some of these old " signatures."

There are also a few excellent photographs.

C. O. Nelson [*A.*].

Pen, Pencil and Pastel Sketches by T. Raffles Davison

Hon. A.R.I.B.A.

BY HERBERT PASSMORE [*A.*].

FARM BUILDINGS IN THE COTSWOLDS BY T. RAFFLES DAVISON.

The exhibition of a selection of drawings and sketches by Mr. T. Raffles Davison, extending over a period of nearly half-a-century, now on view at the Institute Galleries, should not be missed.

Whether the medium employed be pen and ink, pencil or pastel, the observer cannot fail to be struck by the amazing industry, the high level of achievement and the extraordinary versatility evinced in Mr. Raffles Davison's work.

The earliest drawing in the galleries is one that was exhibited at the Royal Academy 47 years ago, and a comparison between this and his work of the present day shows that there has been no deterioration, as might have been expected over so long a period. On the contrary, the well-known delicacy and sureness of touch are maintained, with an added freedom and perception.

Mr. Davison's drawings of buildings look like buildings, which is more than can be said of many architectural drawings.

He has an instinctive capacity for bringing out the essential points of a design, and at the same time suggesting the detail without undue emphasis, whether in the slightest of his "Rambling Sketches" or in the more elaborate drawings, such as those of Westminster Hall and Somerset House as seen from the Embankment under the arch of Waterloo Bridge. The facility, completeness and sureness of touch shown in these two drawings is beyond praise.

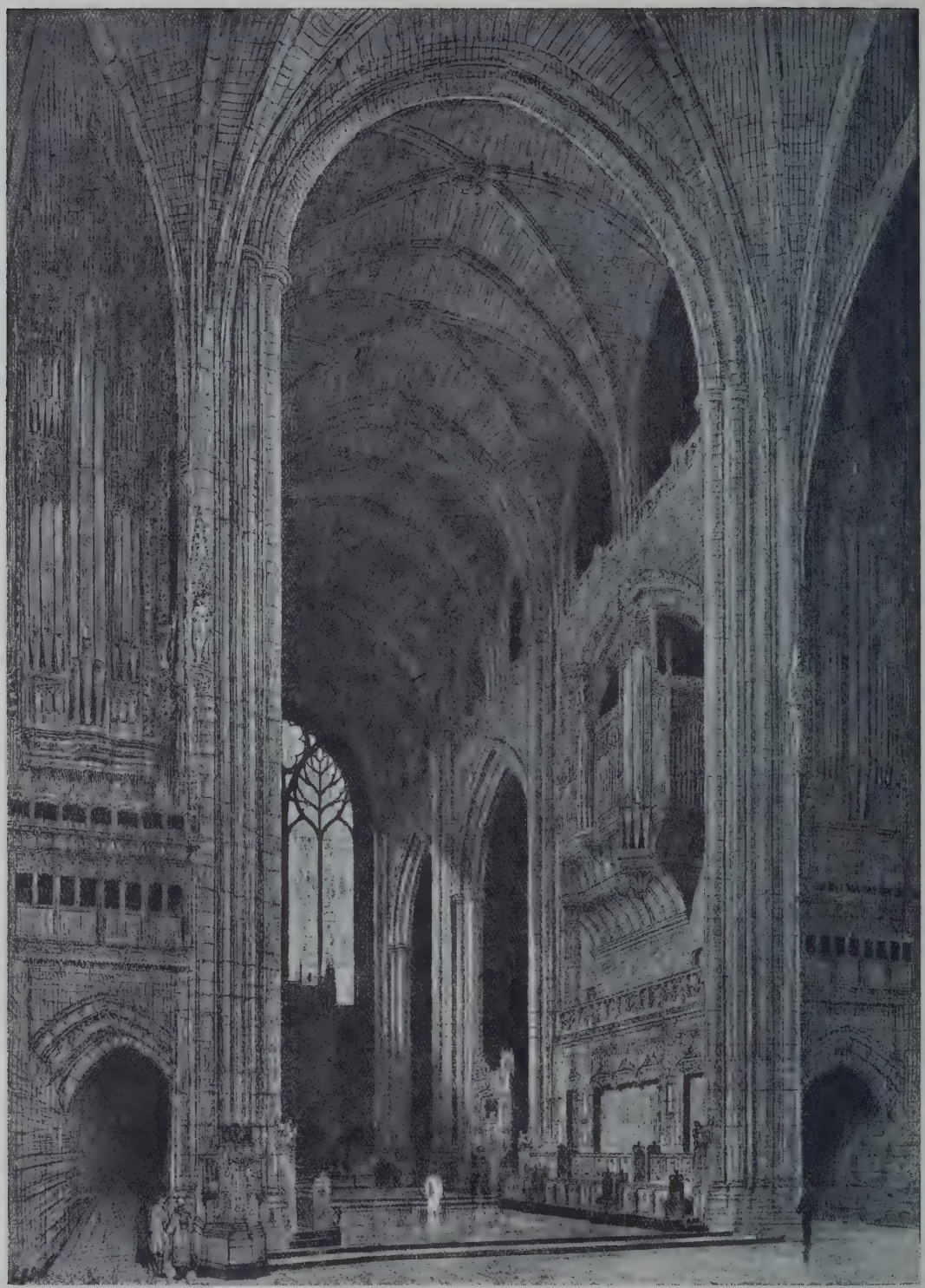
In the medium of pastel, both as applied to architecture, as in the two drawings of projects for the Charing Cross Bridge, and to landscape, Mr. Raffles Davison's work is no less distinguished. There is a charming simplicity, breadth and delicacy in these drawings, combined with a sense of colour, that make them decorative in the highest degree. They appear to have been produced without effort, and one may perhaps surmise that this medium has a particular attraction for the artist.

The few portraits exhibited show that Mr. Davison has the power of bringing out the character of the sitter and at the same time producing a pleasing picture, as in the admirable drawing of the late Mr. Phéné Spiers.

Such an exhibition has an educative value to young and old alike that cannot be exaggerated, and it is to be hoped that it may be followed by others of a similar nature in the future.

THE OPENING OF THE EXHIBITION.

Mr. Henry M. Fletcher, in the unavoidable absence of Mr. Arthur Keen, the Honorary Secretary of the Institute, in opening Mr. Raffles Davison's Exhibition on April 15, referred to Mr. Davison's long career as an artist, to his inexhaustible youth and vitality—each year to him only meant a further output of skilful drawings, and as these were mostly undated they were as timeless as the artist himself owing to his consistent draughtsmanship. His adaptability was illustrated by the large collection of pastel drawings in the West Gallery, a new artistic expression which Mr. Davison had recently adopted and a medium in which he worked with a sensitive appreciation of its possibilities. With regard to the pen and ink and pencil sketches, Mr. Fletcher said that their admirable effect depended more upon suggestion than elaboration, and



Sir Giles Gilbert Scott, R.A., Architect *Drawing by T. Raffles Davison*

LIVERPOOL CATHEDRAL—INTERIOR VIEW

n his drawings of buildings the illustration often ooked better than the executed work. He also dwelt ıpon Mr. Davison's sketches of furniture and archi-:ectural detail.

Mr. Davison, in reply, thanked the Institute for providing him with the opportunity of exhibiting his work. He stated that he began sketching when he was four years old, and throughout his whole career his relations with architects had always been of the most cordial character.

The Doone Valley. A Pastel Sketch by T. Raffles Davison

Correspondence

ARCHITECTURE AND THE CRAFTS LECTURES

73 St. James's Street, S.W.1.
April 6, 1925.

To the Editor, Journal R.I.B.A..

Dear Sir,—If the course of lectures arranged ›y the R.I.B.A. are all to be of the high quality of hat which I was privileged to listen to on Friday, ;rd April, not only must students benefit greatly, ›ut the public at large, and the practising architects ılso who need to be constantly reminded of the funda-nental principles belonging to the various crafts, ›o plainly stated by the lecturer.

"Painting, Carving and Sculpture" was the subject ›f Mr. Laurence Turner's lecture to which I refer. :t was charmingly clear, well delivered, and without ı word too much. The lantern slides were admirably :hosen, and helpful in spite of the absence of colour.

The lecturer applauded the speaker who followed ıim for saying that he could not make any distinction ›etween sculpture and carving. If such distinction :eally existed, it could only be one of size. And also hat no sculpture or carving was complete until it was coloured; for Nature never provided us with form without colour.

Mr. Turner also made it quite clear that the conventions growing naturally out of material, and expressed by form, should have the same degree of convention in their colour. This was especially necessary in rendering the human form. Realistic flesh colour applied to a Greek statue made it look like an exhibit from Madame Tussaud's.

Messrs. Liberty and Co. deserve great credit for their pioneer pluck. They have demonstrated to the public that shop windows can be thoroughly practical, pleasant and popular without plate glass; and that carving is improved by being coloured. It is only surprising and distressing to notice how much less enrichment by colour Mr. Turner has been allowed to add than there is room for inside the new "Gothic Liberties." It is, however, a good sign of the times that the R.I.B.A. should lend such a powerful hand towards the advancement of the crafts, without which our shops and street buildings would never improve.—Faithfully yours,

C. F. Annesley Voysey.

SOME MANCHESTER STREETS AND THEIR BUILDINGS—SOME ARCHITECTURAL PROBLEMS OF TO-DAY.

South Hill, Hook Heath, Woking.
11 *April* 1925.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—I have just read the review of Professor Reilly's books in the current number of the JOURNAL, and the remark quoted with evident appreciation by the reviewer anent Scotland Yard and an impossible combination, reminds me of a story of a small Scots boy talking to his grandfather about God, who, in the true spirit of his race, asks if God can do anything He likes, and on being answered in the affirmative, asks if He can make a stone so large that He cannot lift it?

When Professor Reilly says that Scotland Yard is an impossible compromise between a German Schloss and a French chateau he is treading on the same ground as the Scots boy, and it should therefore be inferred that the architect is equally gifted, but I fear this is not his meaning, so I must, in this respect, withhold my meed of admiration for the Professor, which, in other respects, I offer him unstintingly.—Yours faithfully,

HORACE FIELD [*F.*].

LIGHTING OF PICTURE GALLERIES.

81 *Dean Street, Oxford Street, W.*1.
9 *April* 1925.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—Mr. Markham, in the current issue of the JOURNAL, attributes to me, by mistake, a statement to the effect that reflections in the glass of pictures from objects at low angles do not follow the ordinary laws of specular reflection. Picture glass, of course, obeys those laws at all angles. It must therefore " always reflect something " (*pace* Mr. Hurst Seager), the material point being whether it reflects something which is or is not more insistent than the light reflected from the pigments of the picture behind the glass.

My letter merely pointed out that it is practically impossible to keep outside the plane of reflection from low angles, although reflection from high angles can often be avoided by keeping pictures low and tilting the top edge forward. Tilting the bottom edge forward, as suggested by Mr. Markham, would doubtless avoid reflections from low angles, but would accentuate the far more serious trouble from high angles. The screening off of brightly lit pictures on opposite walls was mentioned in the discussion on Mr. Hurst Seager's paper and criticised, I think somewhat unduly. If I have erred in giving him credit for suggesting this method of avoiding low-angle reflections I must beg his forgiveness.

The tests mentioned by him were not, I think, substantiated by any detailed figures. In the absence of full particulars of the relative illumination on the pictures and upon objects within the limits of their planes of specular reflection, and of the relative reflection coefficients of those objects and the pigments of the pictures observed, it is obviously impossible to draw any reliable conclusions as to the efficacy of the methods suggested in other and different situations. Obviously it is somewhat dangerous to accept as conclusive any tests in which all material data are not observed and recorded.

It should also be noted that sky aspect cannot be depended upon to give difference in illumination. When the sun is not shining or visible there is generally no measurable difference between the sky brightness of different aspects.

The difficulties of lighting picture galleries satisfactorily without reflections are not amenable to any one specific remedy ; and in spite of the valuable pioneer work of Mr. Hurst Seager there are aspects of picture lighting, both natural and artificial, with regard to which considerable difference of opinion is still possible. Our knowledge of the subject may or may not be complete, but it is undoubtedly scattered. Its collation into a considered report by, say, the Science Committee of the Institute would be of value to architects, and not in this country only.—Yours faithfully,

PERCY J. WALDRAM [*L.*].

CARILLON BELLS FOR NEW YORK.

Croydon,
20 *April* 1925.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—The great carillon of bells for Park Avenue Church, New York, will be played in our works by some of the leading carillonneurs of Belgium and Holland, in a fortnight's time.

The carillon consists of 53 bells, the largest weighing 9 tons, and will be the largest and most complete in existence.

I would like to extend an invitation to the President, Officials, and any Members of the Royal Institute of British Architects who would care to do so, to come and see and hear the carillon played, at one of the dates and times they might choose.

The recitals will be on—

Monday, 4 May, at 12.30 p.m. to 1 p.m. ; 5 p.m. to 5.45 p.m. ; 8 p.m. to 9 p.m.

Tuesday, 5 May, at 12.30 p.m. to 1 p.m. ; 5 p.m. to 5.45 p.m. ; 8 p.m. to 9 p.m.

Wednesday, 6 May, at 12.30 p.m. to 1 p.m. ; 5 p.m. to 5.45 p.m. ; 8 p.m. to 9 p.m.

Thursday, 7 May, at 12.30 p.m. to 1 p.m. ; 5 p.m. to 5.45 p.m. ; 8 p.m. to 9 p.m.

Friday, 8 May, at 12.30 p.m. to 1 p.m. ; 5 p.m. to 5.45 p.m. ; 8. p.m. to 9 p.m.

Saturday, 9 May, at 12.30 p.m. to 1 p.m. ; 5 p.m. to 5.45 p.m. ; 8 p.m. to 9 p.m.

Sunday, 10 May, by arrangement.

If visitors could arrive half-an-hour before the stated time of a recital, the carillon could be viewed before the playing begins , as it is desirable to take up some position away from the bells during the recital.

I am,
Yours faithfully,
CYRIL F. JOHNSTON
(of Messrs. Gillett & Johnston).

TOWN-PLANNING IN RURAL ENGLAND.

At a meeting of important local authorities of Hertfordshire, which was held at the Law Society's Hall, Chancery Lane, on March 30, and which was addressed by Mr. Neville Chamberlain, the Minister of Health, a Joint Town Planning Committee was appointed to prepare a scheme for the necessary arterial, orbital and other main roads for the county, and to submit it to the Town Planning Institute. In reference to some remarks made by Lord Salisbury on the "urbanisation" of Hertfordshire, Professor Abercrombie contributed the following letter to *The Times* :

"Lord Salisbury's very human lament at the building up of Hertfordshire needed no apology : it is sympathised with by one whose school boyhood was also spent in a corner of that delectable county, then remotely rural. A regional plan, as advocated by Mr. Neville Chamberlain, will certainly attempt to preserve some of the most beautiful rural spots ; but may I point out what appears to be the most important and also most difficult task before the Joint Committee ? It is not the securing of wide and adequate roads, the setting back of buildings, or even the rendering of roads attractive by means of the admirable Bill which Colonel Ashley is promoting ; it is not, again, in the zoning of industries or the preservation of open spaces.

"It is the regulation of normal residential development which presents the vital problem. Briefly, it may be said that there are two methods of residential growth—the ribbon unrolled along the roadside and the radiation emanating from a central nucleus. The additions to existing towns and villages are examples of the latter method ; the former is only too visible as the new method which is being unconsciously adopted through the whole of England as a result of the new motor-omnibus services and use of private motor-cars. Soon this green and pleasant land of ours will only be glimpsed from our country roads and lanes through an almost continuous hedge of bungalows and houses !

"If pre-war house plotting was too dense, there is a present danger of its becoming too loose, not only thus inflicting the maximum destruction of rural beauty which Lord Salisbury deplores, but laying up a heritage of administrative expense, the ribbon development being clearly the most extravagant method to sewer, water, light and police. Letchworth and Welwyn have shown the economic advantages of the "central nucleus" method on a large scale for a new site. Similar nuclei should be encouraged at definite strategic spots ; but whether there are any powers of compulsion is extremely doubtful : the land cannot be zoned as unsuitable for building on, the houses are at a low density per acre, and they conform with the bye-laws. In East Kent a tentative solution is being propounded, and we are wondering whether the Minister of Health can accept it as *intra vires* of the Town Planning Acts.

"Unless something is done, rural England will in a few years have totally disappeared. It is not, of course, that one wishes to stop building or to prevent people having houses with the open country at hand, but to design that growth in the form of grouped communities with their centres of neighbourhood life, rather than to spread it out, one house deep, along interminable road frontages."

BRITANNIC HOUSE

VISIT OF THE R.I.B.A. IN CONJUNCTION WITH THE ARCHITECTURE CLUB.

BY CHARLES MARRIOTT.

By the simple expedient of looking owlish at a leg-pulling remark, and producing pencil and paper at the right moment, the present writer got from Sir Edwin Lutyens a sketch plan of Britannic House which went a long way towards clearing up the confused impressions of a visit which resolved itself into a pursuit of the Pied (Briar) Piper. When caught he was much more disposed to croon over the oil engines in the basement than to explain his design. The obvious thing to say about Britannic House is that its interior arrangements are only politely indicated in its elevations; but a glance in imagination from the nightmare site to the orderly oval of Finsbury Circus shows that in this matter the architect has made a virtue of necessity. Owing to the peculiarities of the site the general plan resembles nothing so much as a Cubistic still life design by Braque or Herbin ; and it could only have been confessed openly in an elevation which would have been below instead of above the standard of architectural dignity maintained by the other buildings in the Circus.

Sir Edwin Lutyens has grasped his nettle firmly, and brought a remarkable degree of order into what might well have been a chaotic jumble of offices behind the façades. In untechnical language the building consists on plan of a crescent and an oblong, which are far from being parallel, connected at their centres by a Y-shaped corridor and at their eastern ends by a zigzag suite of rooms, the western ends being as yet unconnected. This framework of offices encloses irregular courts, thus ensuring efficient lighting on all floors and affording space for skylights to the basement. When completed by the western link, the irregular, hollow block of building will be bound together above by a continuous slate roof without dormers. No regret need be felt at the omission of the tower in the original scheme; to judge by a rough water-colour perspective hanging in one of the rooms the effect would have been that of an Italian palace surmounted by a Norman—or rather Saxon—"keep."

The best impression of the architectural treatment of the interior is got by following in imagination, and in all three dimensions, the course of the marble sheathing ; from the oblong entrance hall behind the three-arched entrance from the Circus to the apse-like termination of the central corridor where two ways branch, one to Moorgate and the other to a secondary staircase ; and up the principal staircase to the fifth floor, fronted by columns in the Circus elevation, where the official quarters—the board-room, chairman's and director's rooms—are situated. In this marble-membraned administrative and circulatory system, as it might be called, the decorative responsibility is put mainly upon the beautiful material itself, as it may be displayed in discreet and well proportioned arches, columns and vaulting. What strikes one most of all in the general run of the offices

is the economy of space and the efficiency of lighting achieved, and the simplicity and unity of effect produced by the similarity of parts; and the relation between quarter-deck and lower-deck accommodation is all that could be desired. Britannic House, then, may be regarded as an example of the adjustment of orderly planning on an exceedingly difficult site to dignified elevations with not more than a polite indication of one in the others.

SIR FRANK BAINES.

Sir Frank Baines, C.V.O., C.B.E., Director of Works, H.M. Office of Works, has been elected a Fellow of the Royal Institute by a unanimous vote of the Council under the terms of Bye-law 12.

TELEPHONE KIOSKS.

Sir Giles Gilbert Scott's Design.

On the recommendation of the Royal Fine Art Commission, the Postmaster-General recently instituted a competition for a design of a telephone kiosk suitable for erection in busy thoroughfares of large towns. It has now been decided to adopt the design submitted by Sir G. Gilbert Scott, R.A., which was placed first in order of merit by the Commission, and an order has been given for a preliminary supply of kiosks to that design.

WAR MEMORIALS TO THE MISSING DEAD.

The Imperial War Graves Commission announce that the Assessor, Sir Aston Webb, R.A., has made the following awards in the competitive design for memorials to the missing dead at Cambrai and Soissons :—

Cambrai—(1) Mr. H. Chalton Bradshaw [*A.*]; (2) Mr. William G. Newton, M.A. [*F.*]; (3) Mr. J. O. Cheadle [*A.*] A.R.C.A.

Soissons—(1) Messrs. Gordon Holt and Verner O. Rees [*A.*].

MR. WALDRAM'S PAPER ON "NATURAL AND ARTIFICIAL LIGHTING."

Members and visitors who were present at the reading of Mr. Waldram's Paper on the 20th inst. who, owing to the lateness of the hour, were debarred from taking part in the subsequent discussion are invited to send their remarks to the Editor R.I.B.A. Journal in order that they may be published with the discussion.

GOVERNMENT BUILDING FOR EDINBURGH.

Negotiations are proceeding with a view to the erection in Edinburgh of a huge building for the accommodation of all the Government Departments, except the General Post Office. These departments are at present spread all over the city. The site of the proposed building is a large open space near the centre of Edinburgh, which was formerly the North British Edinburgh-to-Glasgow canal basin, and was the property of the old North British Railway. When the canal basin was removed from the city the site was acquired by a private speculator, and was sold to the representative of two large firms in London and Edinburgh.

Allied Societies

DEVON AND EXETER ARCHITECTURAL SOCIETY.

At the annual general meeting of the Society held at Exeter on 28 March, the annual report for the year 1924-1925 was adopted as follows :—

In presenting their thirty-fifth report the Council are pleased to state the numbers of the Society are as follows :—

	Membership 1923–24.	New Members.	Resignations and Transfers.	Membership 1924–25.
Members ..	59	5	1	63
Honorary Members	1	0	0	1
Associate Members	24	8	4	28
Associates ..	25	3	10	18
Total ..	109	16	15	110

Further careful consideration has been given to the Proposed New Rules which have been based on those of the South Wales Institute of Architects. The latter were originally forwarded by the Secretary R.I.B.A. with the recommendation of the Allied Societies Conference that they should be adopted by Allied Societies. The Council have been in constant touch with the Committee of the Plymouth Branch on this matter and have now pleasure in placing the draft before the Annual General Meeting, approved by the Council of the Institute.

The proposed new Buildings Bye-Laws for the City of Exeter were submitted to the Council, but it is regretted that the time allowed for their perusal was so short that it was impossible to consider them.

In August the R.I.B.A. Prize Drawings were exhibited at the Royal Albert Memorial School of Art, Exeter, and the Lecture Hall of the Public Library, Plymouth. In September Testimonies of Study submitted for the Final Examination R.I.B.A. were exhibited at a General Meeting of the Society. These exhibitions were of great interest, and it is hoped to repeat them this year.

The Council note with great pleasure that their President, Mr. J. L. Fouracre, has been appointed Lecturer on Architecture at Plymouth. They have also pleasure in reporting that Mr. James Jerman has again very kindly consented to become the representative of the Society on the Exeter Junior Technical Advisory Committee. They wish to place on record their appreciation of his services in this capacity.

The question of facilities for Architectural Education in this district is now receiving the careful attention of your Council, and a full report has been submitted to the Board of Architectural Education of the Royal Institute. It is hoped that with the co-operation of the Institute facilities may be much improved in the near future.

Three sets of drawings were submitted for the Annual Measured Drawing Prize offered by the Society. The first prize of two guineas in books has been awarded to Mr. F. S. Stilwell for a very excellent set of the "Garden House, Mount Edgcumbe," and an honorarium of one guinea in books has been awarded to Mr. P. O. G. Wakeham for a careful set of drawings of "The Citadel,"

Plymouth. The Council are very pleased at the renewed interest in this competition and at the standard of the work submitted.

The first publication of the Wren Society has been received and has been placed in the Library. Members will find this work of extreme interest.

The monthly discussions at the General Meetings throughout the winter have been well attended and have proved a source of great interest and information.

The first discussion took place after the exhibition of the Testimonies of Study in September and was followed by "Romance of Steel," opened by Mr. W. J. M. Thomasson; "Town Planning in Exeter," opened by Mr. L. F. Tonar; "Architecture," a recent article in the *London Mercury*, opened by Mr. J. Jerman.

At the January General Meeting Mr. R. M. Challice gave a most interesting and instructive paper on "Craftsmanship and Apprenticeship."

Mr. J. L. Fouracre, F.R.I.B.A. was re-elected President for the ensuing year, and the following officers and Council were elected to fill the vacancies of those retiring.

Vice-Presidents.—Mr. E. F. Hooper, L.R.I.B.A. (Exeter), Mr. H. Victor Prigg, A.M.I.C.E. (Plymouth). *Members of Council.*—Mr. L. F. Tonar, L.R.I.B.A. (Exeter), Mr. F. A. Verco, A.R.I.B.A. (Plymouth), Mr. R. M. Challice (Exeter). *Associate Member of Council.*—Mr. D. W. Cooper (Exeter). *Hon. Treasurer.*—Mr. Samuel Dobell (Exeter). *Hon. Auditor.*—Mr. L. F. Tonar, L.R.I.B.A. (Exeter). *Hon. Librarian.*—Mr. W. J. M. Thomasson, A.R.I.B.A. (Exeter). *Hon. Secretary.*—Mr. J. Challice, A.R.I.B.A. (Exeter).

GLASGOW SCHOOL OF ARCHITECTURE.

Mr. E. G. Wylie [*A*] has been appointed Head of the School of Art Section of the Glasgow School of Architecture in place of Mr. Alexander McGibbon [*A*], who retires at the end of the session.

Mr. Wylie obtained the R.I.B.A. Silver Medal (Measured Drawings) in 1905 and the Diploma of the Glasgow School of Architecture in 1911. He was one of the finalists in the first Rome Scholarship Competition, 1913, and for some years assisted the late Professor Eugène Bourdon.

The firm of Messrs. Wright and Wylie, of which Mr. E. G. Wylie is a member, has carried out a large number of important buildings, and obtained first premium in the Hillhead School and Greenock War Memorial Competition.

Twice mentioned in Dispatches, awarded the Military Cross with Bar, and elected a Chevalier of the Order of the Crown of Roumania, Mr. Wylie had a distinguished army career as Captain in the Durham Light Infantry and an Officer of the Intelligence Staff.

ARCHITECTURAL LANTERN SLIDES.

Mr. Hope Bagenal, the Librarian of the Architectural Association, has presented to the Institute Library a catalogue of the large collection of lantern slides in the possession of the Architectural Association which are available, at a small fee, for the use of lecturers on architectural subjects. The catalogue cannot be issued on loan.

Obituary

CAPTAIN HERBERT WILLIAM LOCKTON, L.R.I.B.A., M.S.A., A.R.S.I.

Captain Lockton, who died under tragic circumstances in London on the 8th December last, was born in 1878. He began his architectural education as a pupil in the office of the late Mr. George Sheppard, Newark-on-Trent, and became his partner in 1906, the firm thereafter being carried on under the style of Sheppard and Lockton, until 1914, when Mr. Sheppard died, and Mr. Lockton carried on the practice alone. During the war he did good service in defence and other works with the Royal Engineers on the North-East Coast and attained the rank of Captain.

Mr. Lockton was elected a Member of the Society of Architects in 1907, and a Licentiate of the R.I.B.A., in 1911.

He returned to his practice in 1920 and quickly rebuilt his extensive connection. In addition to having a large private practice he held appointments as architect and surveyor to the two largest local brewery companies at Newark, to the Charity Commissioners, as well as various honorary appointments. His principal architectural works in Newark were the Magnus Grammar School, St. Leonard's Vicarage, Restoration of the Tudor Hall, St. Leonard's Homes for aged people, the Isolation Hospital, etc., at Skegness, business premises, and many private works in Nottinghamshire and Lincolnshire.

Captain Lockton was a staunch Churchman, an accomplished musician, and a prominent freemason. In 1911 he edited a small volume dealing with the principal places of interest to visitors to the ancient town of Newark.

S. OSBORNE BLYTHE [*Licentiate*].

We regret to announce the death of Mr. Samuel Osborne Blythe after a long and painful illness. For some years Mr. Blythe occupied a position in the Public Works Department, Aliwal North, South Africa, but returned to England in 1906. He acted as architect to the Duke of Portland (Ashington Estate) until his last illness.

DAVID ROBERTSON [*F.*].

David Robertson died on 20 February in his ninety-first year. He was trained in the office of the City Architect, Edinburgh, and for three years also attended classes at the School of Design. He was elected an Associate of the Royal Scottish Academy in 1893. He was admitted a Fellow of the R.I.B.A. in 1907. He was more than once President of the Edinburgh Architectural Association. For several years he was architect for the East of Scotland for the United Presbyterian Church, and designed and supervised many churches, church halls and manses. The best-known buildings he designed and built were North Morningside Church and the John Ker Memorial Church, both in Edinburgh.

THE LATE FREDERICK PINCHES [*A.*].

We regret to announce the death of Mr. Frederick Pinches, an Associate of the Institute, who died on 28 February 1925 at the age of seventy-two.

He was the son of the late Dr. Pinches, of Kennington, and served his articles with a Mr. Andrew Wilson, of East India Avenue, Fenchurch Street, and afterwards spent some time in the office of Mr. George Scamell, of Westminster. He practised in the Strand and afterwards in John Street, Adelphi, and finally removed to Walton-on-Thames. His practice was of a varied nature. For some years he was architect for the Alliance Bank, Ltd., and carried out for them several new branches in different parts of London. He was also architect for the College of Preceptors' buildings in Bloomsbury. He carried out extensive warehouse buildings for Messrs. Thorley at Islington and Wandsworth, factories at Bermondsey, residential property for Sir Edward Clarke and the late Sir Henry Irving, etc.

He was joint architect with Mr. E. Harnor for public baths and washhouses at Bow, Kensal Town and Hackney.

In his early days he gained the Silver Medal of the Institute for his measured drawings of Melrose Abbey.

THE SOCIETY OF ARCHITECTS.

Generous Benefaction to the A.B.S.

As the Society of Architects will cease to exist as a separate body on its amalgamation with the R.I.B.A., and will, therefore, be unable to continue its annual contribution of 25 guineas to the Architects' Benevolent Society, the Council have, prior to liquidation, contributed out of the funds of the Society a sum of five hundred guineas to be invested and the income applied for the benefit of the Benevolent Society, so that the charity may not suffer financial loss by the dissolution of the Society. This generous action is much appreciated by the Council of the Architects' Benevolent Society, and they desire publicly to thank the Society on behalf of their members.

Mr. S. Hurst Seager recently left England for New Zealand, via San Francisco, by the *Andania*, sailing for New York as representative of the Government of New Zealand at the International City and Regional Planning Conference. He will attend the Conference of the American Institute of Architects to be held in that city, and at the invitation of the American Art Directors' Association, will speak at their Annual Meeting to be held in St. Louis on May 20th, when a special session will be devoted to the Lighting of Picture Galleries and Museums.

The delay in the publication of his book on this subject will enable him to include in it tests of the American galleries and the lessons to be learnt from them.

He hopes to complete his work at Wanganui, New Zealand, by carrying out a series of experiments and tests at the Sarjeant Art Gallery.

Mr. Hurst Seager's address till the end of April will be :— Town Planning Conference Bureau, Hotel Pennsylvania, U.S.A.; and until the end of July, P.O., San Francisco; till the end of August, P.O., Honolulu, and after that date, Christchurch, New Zealand.

From these places he will be pleased to continue to answer any questions on the lighting of Galleries which may be addressed to him, and will also be glad to receive any information as to progress made.

MR. KEEN ON THE CITY CHURCHES.

The British Broadcasting Company have been fortunate in obtaining the services of Mr. Arthur Keen for broadcasting on 1 May on the subject of the City Churches, on which he is such an authority and has so often lectured or written.

ARCHITECTS' REGISTRATION COMMITTEE.

Mr. MacArthur Butler, L.R.I.B.A. (Chartered Architect), whose activity as Secretary of the Society of Architects for so many years in promoting the cause of Registration is so well known, has been appointed by the Institute Council to the position of Secretary of the Architects' Registration Committee.

ADRIAN BERRINGTON'S ETCHINGS.

An exhibition of the work of the late Adrian Berrington will be held at the Architectural Association from 4 May until 30 May. The exhibition will include a selection of Mr. Berrington's etchings which are little known but which attain high artistic quality. The artist, who died at the age of thirty-six, in 1923, was Professor of Architecture at Toronto University, and will be remembered as one of the most brilliant architectural draughtsmen of his time, both in pen and ink and water colour drawings. His important work as an etcher is represented by a large plate of Waterloo Bridge, which will form part of the exhibition, at which copies will be obtainable at five guineas each.

ARCHITECTURAL ASSOCIATION.

The annual ball of the Association ("A May Day Revel") will be held in the galleries of the R.I.B.A. on Friday, 1st May. Tickets, including refreshments, can be obtained from Mr. F. R. Yerbury, 34–35, Bedford Square, W.C., and Mr. E. J. Haynes, R.I.B.A., 9, Conduit Street, W. Tickets, including refreshments, £1 1s.

CHEAP TRAVEL IN ITALY.

The London office of the Italian State Railways and State Tourist Department has published particulars of tickets in Italy at very reduced rates which are being issued in connection with the Holy Year, the Sicilian Spring Season and the Art Exhibition in Venice. The reductions vary from 50 per cent. to 60 per cent., according to destination. For example, a ticket from London to Sicily and back *via* Paris-Turin-Genoa-Rapallo-Pisa-Naples-Palermo-Messina-Florence, etc., covering a distance of over 3,000 miles, costs only £14 7s. first, and £9 17s. second class.

ARCHITECTS' BENEVOLENT SOCIETY.

Scheme of Insurance.

In view of the interest shown by architects in the Scheme of Insurance, the Council of the Architects' Benevolent Society have recently secured the help of an advisory committee of insurance specialists.

The Architects' Benevolent Society is now in a position to answer enquiries on every class of insurance business, whether concerning existing or contemplated policies, and is ready to give considered advice on all such questions.

NOTES FROM THE MINUTES OF THE COUNCIL MEETING.

30th March 1925.

School of Architecture, Sydney.

The Council, on the recommendation of the Board of Architectural Education, decided to recognise for exemption from the R.I.B.A. Intermediate and Final Examinations, with the exception of the portion relating to Professional Practice and subject to certain other conditions, the following Architectural School :—

The School of Architecture, The University of Sydney.

R.I.B.A. Examinations.

It was decided to add to the Examiners in Professional Practice the name of Mr. John Keppie, A.R.S.A., as a Scottish representative so as to facilitate the taking of this examination by the Scottish candidates.

Wages Slips on Tenders.

On the recommendation of the Architects' and Builders' Consultation Board it was decided to continue for a further 12 months, from 25th March 1925, the arrangement made in 1924 between the R.I.B.A. and the National Federation of Building Trades' Employers regarding the placing on Tenders of a slip providing for adjustments to be made in the event of a rise or fall in wages.

London Street Architecture Medal, 1924.

The award of the Jury in favour of the Auctioneers' and Estate Agents' Institute Building, 29, Lincoln's Inn Fields (Architects, Messrs. Greenaway and Newberry, FF.R.I.B.A.) was announced.

Standardisation of Building Materials.

Mr. Percival M. Fraser [*F.*] was nominated to represent the R.I.B.A. upon a Sectional Committee appointed by the British Engineering Standards Association to deal with the question of the Standardisation of Building Materials.

International Town Planning Federation, New York.

It was decided to invite Mr. A. Beresford Pite to act as the official representative of the R.I.B.A. at this Conference.

Housing in Holland.

It was decided to invite Mr. T. Alwyn Lloyd to act as the R.I.B.A. representative upon a visit to Holland arranged by the National Housing and Town Planning Council for the purpose of studying Housing Conditions in various Dutch centres.

Transfer to Retired Fellowship.

Mr. Maurice B. Adams, who was elected an Associate of the R.I.B.A. in 1876 and a Fellow in 1886, was transferred to the list of Retired Fellows.

Reinstatement

Mr. Wray W. Wheston was reinstated as Licentiate.

REGISTRATION OF PROBATIONERS.

Attention is drawn to the fact that the Council, on the recommendation of the Board of Architectural Education, have decided that except in very special cases a Head Master's Certificate shall not be accepted after 1 October 1927, and that no one shall be registered as a probationer unless that person has passed one of the recognised examinations in the required subjects.

The following are the recognised examinations :—

The Matriculation Examination at any University in the British Empire.

The Senior or Junior (Honours) Local Examinations conducted under the authority of any University in the British Empire.

The School or Leaving Certificate of the Oxford and Cambridge Schools Examination Board.

The Examination held under the Central Welsh Board.

The Examinations for the First Class Certificate of the College of Preceptors.

The Senior or Junior School Examination or the Matriculation Examination of the University of London.

The Senior School Certificate or the School Certificate of the Joint Matriculation Board of the Universities of Manchester, Liverpool, Leeds, Sheffield and Birmingham.

The School Certificate of the University of Bristol.

The Higher School Certificate Examination of the Oxford and Cambridge Schools Exmination Board.

The Higher School Certificate Examination of the Oxford Delegacy for Local Examinations.

The Higher School Certificate Examination of the Cambridge Local Examinations and Lectures Syndicate.

The Higher School Certificate Examination of the University of Bristol.

The Higher Certificate Examination of the University of Durham.

The Higher School Certificate Examination of the University of London.

The Higher School Certificate Examination of the Northern Universities Joint Matriculation Board.

The Higher Certificate Examination of the Central Welsh Board.

The Senior Certificate Examination of the Ministry of Education, Northern Ireland.

Or such other examinations as may be satisfactory to the Board of Architectural Education.

Notices

THE ANNUAL GENERAL MEETING, 4 MAY 1925.

The Ninety-first Annual General Meeting will be held on Monday, 4 May 1925, at 8 p.m., for the following purposes :—

To read the Minutes of the meeting held on 20 April 1925 ; formally to admit members attending for the first time since their election or admission ; to announce the names of candidates nominated for election, 8 June.

To receive the annual report of the Council and Standing Committees for the official year 1924–25, printed on preceding pages of this issue. Copies of the report will be available for members at the meeting.

To nominate candidates (two members) for the office of hon. auditor for the ensuing year.

To receive the list of attendances at the Council and Standing Committees during the Session.

THE ANNUAL DINNER 1925.

It has been decided by the Council that the Annual Dinner of 1925 is to be held on Tuesday, 12 May, at 6.30 for 7 p.m., at the Trocadero Restaurant, Piccadilly Circus, W.1. A number of distinguished guests are expected, and it is hoped that a large number of members will be able to be present.

The price of tickets is £1 11s. 6d. for Members and for Members' guests (inclusive of wines and cigars). It would be a convenience if Members would kindly give the names of their guests when applying for tickets. All applications, with cheques, should be addressed to the Secretary.

Early application would greatly facilitate the arrangements ; and if Members would send an intimation to the Secretary some days beforehand as to the friends near whom they desire to sit, every endeavour will be made, when arranging the plan of the tables, to meet their wishes as far as possible.

VISIT TO WESTMINSTER ABBEY.

WEDNESDAY, 29 APRIL 1925.

A visit has been arranged by the Art Standing Committee to take place on Wednesday, 29 April 1925, at 5.30 p.m., to Westminster Abbey (including the Jerusalem Chamber, the Triforium and St. Stephen's Crypt). Members desirous of taking part are requested to make early application to the Secretary R.I.B.A., 9 Conduit Street, London, W.1.

THE CITY CHURCHES.

It is proposed to arrange in the R.I.B.A. Galleries an Exhibition of Drawings and photographs of the Churches in the City of London from 5 to 13 June 1925.

The Committee in charge of the arrangements would be glad to receive from Members the loan of any drawings suitable for exhibition. Drawings so lent will be insured and returned, carriage paid.

ARCHITECTURE AND THE CRAFTS

On Thursday, 30th April, at 3 p.m., Mr. J. D. Batten will deliver a lecture on "Mural Painting" in the Galleries of the R.I.B.A., 9, Conduit Street, W.1.

In connection with this lecture an Exhibition of Mural Painting has been arranged. The Exhibition will remain open, free to the public, from 3 p.m., on Thursday, 30th April, till Friday, 8th May, inclusive. Hours : 10 a.m. to 8 p.m. (Saturday, 5 p.m.).

BOARD OF ARCHITECTURAL EDUCATION.

RE R.I.B.A. PRIZES AND STUDENTSHIPS, 1925–1926.

As a result of the R.I.B.A. Conference on Prizes, the conditions for the various prizes and studentships have been largely revised, and the alterations have been embodied in a pamphlet, additional copies of which are obtainable at the R.I.B.A., price 1s., exclusive of postage.

PROFESSIONAL CONDUCT.

Complaints having been received from several Members regarding a circular letter issued by Mr. Brook Kitchin [*F.*] in November last, preceding his retirement from the Government service, in which he offered his services to public officials and others, the matter was referred to the Practice Standing Committee for investigation. After careful consideration of all the circumstances, the Practice Standing Committee reported to the Council, who have agreed to the publication of the following letter : —

13 *February* 1925.

DEAR SIR,—It has been pointed out to me that in advising certain officials by means of a letter dated 25 November 1924, that my professional services were available in a consultative capacity as the result of my retirement from public service, I was infringing the etiquette recognised by members of the Institute, and as I now realise that this is actually the case I herewith express my sincere regret at having written such letter.

(Signed) BROOK KITCHIN.

The Secretary R.I.B.A.

LOAN LIBRARY CATALOGUE.

A new catalogue, brought up to date, of the Loan Library has recently been compiled, and can be now obtained on application at the R.I.B.A., price 1s. 6d., postage 3d. extra.

Competitions

CAERPHILLY WAR MEMORIAL COMPETITION AND RAMSGATE LAY-OUT COMPETITION.

The Competitions Committee desire to call the attention of Members to the fact that the conditions of the above competitions are not in accordance with the Regulations of the R.I.B.A. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime Members are advised to take no part in the above competitions.

BOROUGH OF GRAVESEND. NEW DIPHTHERIA BLOCK.

Members of the Royal Institute of British Architects must not take part in the above competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

ASHFORD U.D.C. COMPETITION. ASSEMBLY ROOM CONVERSION.

The Competitions Committee desire to call the attention of Members to the fact that the conditions of the above competition are not in accordance with the Regulations of the R.I.B.A. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime Members are advised to take no part in the competition.

COMPETITIONS (continued)

PROPOSED REBUILDING OF THE ENGLISH BAPTIST CHURCH, PONTLOTTYN.

The Competitions Committee desire to call the attention of members to the fact that the conditions of the above competition are not in accordance with the regulations of the R.I.B.A. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime Members are advised to take no part in the competition.

NATIONAL COMMEMORATIVE WAR MONUMENT.

To be erected on Connaught Place, Ottawa, Canada. Closing date for receiving designs, 11 June 1925. Assessors Henry Sproatt, LL.D., R.C.A., Herman A. MacNeil, N.A., F. J. Shepherd, M.D., C.M., LL.D. Total cost not to exceed $100,000. Apply to the Secretary, Department of Public Works, Ottawa, Canada.

PROPOSED PRESBYTERIAN CHURCH AT CHEAM, SURREY.

The Competitions Committee desire to call the attention of Members to the fact that the Conditions of the above Competition are not in accordance with the Regulations of the R.I.B.A. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime Members are advised to take no part in the Competition.

PROPOSED EXTENSION TO THE SHIREHOUSE, NORWICH.

Closing date for receiving designs 1 July 1925. Assessor, Mr. Godfrey Pinkerton, F.R.I.B.A. Premiums £150, £100, and £50. Apply to the Clerk of the County Council, Shire Hall, Norwich.

COALVILLE PUBLIC BATHS COMPETITION.

The President of the Royal Institute of British Architects has nominated Mr. Alfred W. S. Cross, F.R.I.B.A., as assessor in this competition.

COMPETITION FOR A HIGH BRIDGE OVER COPENHAGEN HARBOUR.

Copenhagen Municipality hereby invite participation in an International Competition in connection with a High Bridge over Copenhagen Harbour.

The Municipality have set apart a sum of 35,000 kroner to be expended in prizes. There will be three prizes, the value of which will be fixed by a Judgment Committee consisting of Members of the Council, together with technicians chosen by the Municipality, the (Danish) Institute of Civil Engineers and the (Danish) Society of Architects. The largest prize will be at least 15,000 kroner.

Programme and particulars in Danish and English can be procured after 1 February 1925, from the City Engineer's Office, Town Hall, Copenhagen B, against a deposit of kr. 100.

The deposit is repayable after the judging, or previously if the drawings, particulars, etc., are returned in good condition. Projects to be delivered to the City Engineers Directorate, Town Hall, before mid-day, 1 September 1925.

After judgment the competing projects will be publicly exhibited at the Town Hall, Copenhagen.

LEAGUE OF NATIONS.

Competition for the Selection of a Plan with a View to the Construction of a Conference Hall for the League of Nations at Geneva.

The League of Nations will shortly hold a competition for the selection of a plan with a view to the construction of a Conference Hall at Geneva. The competition will be open to architects who are nationals of States Members of the League of Nations.

An International Jury consisting of well-known architects will examine the plans submitted and decide their order of merit.

A sum of 100,000 Swiss francs will be placed at the disposal of the Jury to be divided among the architects submitting the best plans.

A programme of the competition will be ready in February, 1925, and will be despatched from Geneva so that Governments and competitors may receive copies at approximately the same date. Copies for distant countries will therefore be despatched first.

The British Government will receive a certain number of free copies. These will be deposited at the Royal Institute of British Architects, and application should be made to the Secretary, R.I.B.A., 9, Conduit Street, W.1, by intending competitors.

Single copies can be procured direct from The Secretary-General of the League of Nations at Geneva, for the sum of 20 Swiss francs, payable in advance, but will not be forwarded until after the Government copies have been despatched.

On the nomination of the President of the Royal Institute, Sir John Burnet, A.R.A., has been appointed as the British representative on the Juryof assessors.

TECHNICAL COLLEGE, MIDDLESBROUGH.

The conditions of the above Competition have been submitted to the Competitions Committee of the R.I.B.A., and are found to be in accordance with the Regulations of the R.I.B.A.

THE NEW INSTITUTE FOR THE BLIND, BUENOS AIRES, ARGENTINE REPUBLIC.

An International Competition has been promoted for the Argentine Institution for the Blind, Buenos Aires, Argentine Republic.

A small number of copies of the Conditions have been deposited in the R.I.B.A. Library for the information of British Architects who may desire to compete.

A booklet containing the full text of the conditions with other information (translated from the Spanish) and a plan of the ground on which the Institution is to be erected is available for inspection at the Department of Overseas Trade (Room 42), 35 Old Queen Street, London, S.W.1.

MASONIC MEMORIAL COMPETITION.

Closing date for receiving designs, 1 May 1925. Assessors: Sir Edwin Lutyens, R.A. [*F.*] (appointed by the President); Mr. Walter Cave [*F.*], Mr. A. Burnett Brown, F.S.I.

APPOINTMENTS IN THE EAST.

The Council of the Royal Institute strongly recommend Members who are considering taking up appointments in the East to make careful enquiries as to the adequacy of the salaries offered before they accept such appointments.

Members' Column

DISSOLUTION AND FORMATION OF PARTNERSHIP.

THE PARTNERSHIP subsisting between Francis Baugh Andrews [*A.*] and Ernest James Hickman [*A.*], Architects and Surveyors, 95, Colmore Row, Birmingham, who carried on business under the style or firm of Andrews and Hickman, was dissolved as and from the 31st day of March, 1925, by mutual consent. The practice is now being carried on at the same address by Mr. Andrews and his son, Mr. Claude E. A. Andrews, B.Sc., A.M.I.Struct.E., under the style of Francis B. Andrews and Son.

PARTNERSHIP WANTED.

L.R.I.B.A., age 44, in practice for nine years prior to five years' service in the Army, educated Public School, desires partnership with well-established firm of Architects; capital available. Provincial practice in South preferred.—Apply Box 8425, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

ARCHITECT-ENGINEER, B.Sc., A.R.I.B.A., age 30, four years' private practice, desires partnership in established firm of repute. Full particulars given and expected. London or South England preferred. Small capital available. Free September.—Apply Box 7425, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

FLAT WANTED

MEMBER would be very glad to hear of small unfurnished flat with bathroom to let in Kensington or Chelsea, with possession in September or earlier.—Apply Box 2735, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

APPOINTMENTS WANTED.

ARCHITECTURAL engineer of very large experience desires work, temporary or permanent, anywhere. Special qualifications in geology, mining, drainage, underpinning and shoring, ventilation and heating, foundations and dilapidations, building and land surveying, also levelling. Highest references. Willing to take charge of job.—Apply Box 8322, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

AN architect and surveyor, skilled in all branches of his profession, is anxious to obtain an appointment. Highest references. —Apply Box 9254, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

ARCHITECT'S WIDOW, thoroughly experienced cooking, economical housekeeper, desires post (with boy of 2) where maid kept; salary; excellent references. Not London.—Reply Box 1655, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

PARTNERSHIP, HONGKONG.

Mr. E. F. RONALD SAMPLE, A.R.I.B.A., M.S.A., Assoc. of the Institution of Structural Engineers, has been taken into partnership by the firm of Messrs. Denison Ram & Gibbs, Architects, Surveyors and Civil Engineers, Hongkong, China.

CHANGE OF ADDRESS.

Mr. R. STEPHEN AYLING [*F.*] has removed his offices from Bedford House, 108, Baker Street, W.1, to 53, Victoria Street, Westminster, S.W.1. Telephone number: Victoria 5886.

MESSRS. KNAPP-FISHER, POWELL & RUSSELL, of 133 Ebury Street, S.W.1, have moved to 4a Lower Belgrave Street, S.W.1, close to Victoria Station. Telephone: Victoria 5982.

ASSISTANT ARCHITECT FOR SINGAPORE.

Applications are invited for the position of Assistant in the office of the Municipal Architect, Singapore, age 23-35 (unmarried). The selected candidate should be a member of the R.I.B.A., the Society of Architects, or similar professional body and experienced in the design, calculation and construction of Reinforced Concrete Buildings. He should be familiar with the L.C.C. Regulations for Reinforced Concrete Construction, and experience in Building Construction in the Far East and a knowledge of Quantity Surveying is desirable.

The sterling amount of the salary is £630 for the first year. Further particulars can be obtained on application to Messrs. Peirce and Williams, MM.Inst.C.E., 180, Hope Street, Glasgow.

ACCOMMODATION OFFERED

SUSSEX.—Member offers Board-Residence in old Farm House in district full of old churches and half-timber houses. Electric light, bath, telephone, part use of motor-car. Advice given to students on measured drawings.—Apply to Box 1845, c/o The Secretary, R.I.B.A., 9, Conduit Street, London, W.1.

A.R.I.B.A. wishes to share his small West End office with another. The situation is excellent, with 'phone and all conveniences. Tracing and typing can be done by arrangement. Would suit one wishing to commence practice.—Apply Box 2345, c/o the Secretary, R.I.B.A., 9 Conduit Street, W.1.

ARCHITECT'S WIDOW offers good accommodation, bed and breakfast, near Russell Square; central for all parts of London. Bathroom. Electric light. Well recommended and terms moderate. —Reply Box 1425, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

PURCHASE OF PRACTICE.

THE practice formerly carried on by the late Captain H. W. Lockton, M.S.A., L.R.I.B.A., A.R.S.I. (under the style of "Sheppard & Lockton"), Architects and Surveyors, 24 Castle Gate, Newark-on-Trent, has been purchased by Mr. John Saunders, L.R.I.B.A., Architect and Surveyor of Newark, and will be carried on as heretofore under the name of "Sheppard & Lockton."

Minutes XII

At the Twelfth General Meeting (Ordinary) of the Session 1924-1925 held on Monday, 20 April 1925, at 8 p.m., Mr. J. Alfred Gotch, F.S.A., President, and afterwards Mr. W. T. Jones, F.S.A., in the Chair.

The attendance book was signed by 17 Fellows (including 5 Members of Council), 13 Associates (including 2 Members of Council), 5 Licentiates, and a large number of visitors.

The Hon. Secretary announced the decease of the following Members :—

Mr. John Singer Sargent, R.A., elected Hon. Associate 1910.

Mr. David Robertson, A.R.S.A., elected Fellow 1906,

and it was RESOLVED that the regrets of the Royal Institute for their loss be entered on the Minutes and that a message of sympathy and condolence be conveyed to their relatives.

The following Members attending for the first time since their election or transfer were formally admitted by the Chairman :—

W. J. H. Leverton [*F.*], M. J. H. Somaké [*F.*], E. J. Williams [*F.*], R. G. Bare [*L.*], Chas. Dunch [*L.*], F. S. Haynes [*L.*].

Mr. Percy J. Waldram having read a Paper on "Natural and Artificial Lighting" and illustrated it by lantern slides and diagrams, a discussion ensued, and on the motion of Dr. Leonard Hill, F.R.S., Director of the Department of Applied Physiology, National Institute for Medical Research, seconded by Mr. J. Herbert Cunliffe, K.C., M.P., Solicitor-General to the Duchy of Lancaster Palatine Court, a vote of thanks was passed to Mr. Waldram by acclamation, and was briefly responded to.

The meeting closed at 10.35 p.m.

Members sending remittances by postal order for subscriptions or Institute publications are warned of the necessity of complying with Post Office Regulations with regard to this method of payment. Postal orders should be made payable to the Secretary R.I.B.A., and crossed.

R.I.B.A. JOURNAL.

***Dates of Publication.*—1924: 8th, 22nd November; 6th, 20th December. 1925: 10th, 24th January; 7th, 21st February; 7th, 21st March; 4th, 25th April; 9th, 23rd May; 13th, 27th June; 18th July; 15th August; 19th September; 17th October.**

VOL. XXXII. No. 13 9 MAY 1925

The Natural and Artificial Lighting of Buildings

BY PERCY J. WALDRAM, F.S.I., *Licentiate.*

[*Read before the Royal Institute of British Architects on Monday, 20 April* 1925.]

IT is only by virtue of light, natural or artificial, that architecture exists at all, and the gradations of light, its colour and intensity, affect so profoundly our appreciation of beauty in mass and detail that the architect may be said, without unduly straining metaphor, to be primarily a craftsman who works in light and illumination as a material. One would therefore expect him to be an ardent student of illumination, and to devote more attention to its most perfect and powerful form of sunlight than to artificial light, and to study its more general form of diffused daylight even more than sunlight.

Actually, however, the subject of illumination, certainly of natural illumination, is I believe entirely absent from the curricula of architectural schools, whilst the knowledge and even the ideas of practising architects on the subject are often extremely hazy and meagre.

There is, I think, no exaggeration in suggesting that the average designer has but little exact information about sunlight, rather less about artificial illumination, and practically none about natural illumination apart from sun. This somewhat extraordinary state of things is chiefly due to the fact that the everyday phenomena of natural light are considered to be too well known and obvious to require attention scholastically. But we are generally most profoundly ignorant of those things which are open to our constant daily observation. What normal man could say at midday what his wife was wearing at breakfast on the same morning, or sketch from memory the figures on the dial of his own watch ?

Familiarity is apt to breed a certain amount of indifference, and our powers of intelligent observation are always more or less dormant with regard to everyday matters.

Nothing could comply with that definition better than the waxing and waning of natural light and the apparent path of the sun across the heavens.

The Eye as a Measuring Instrument of Natural and Artificial Light.

In addition to this potent reason for lack of definite information there are others which are less well known, in fact almost completely unsuspected. Chief amongst these is the fact that our eyes, which we imagine, not without reason, to be capable of indicating varying intensities of illumination, become in the presence of natural light hopelessly and even ludicrously inaccurate as a measuring instrument of intensity, giving us precisely the same visual impression over ranges of variation which are not only large but huge.

Our eyes undoubtedly do so adapt themselves with marvellous automatic precision as to receive only quite a small amount of natural light, something not very much more than the natural illumination at very early dusk or late dawn.

Throughout the day the intensities of illumination available may be some hundreds and even thousands of times this amount; but our eyes automatically reject it, and accept from nature's bounty only that small amount which at other times may be all that is available. For this reason we can and do remain always absolutely unconscious of available intensities of huge amount. Between, say, an hour after sunrise and an hour before sunset there is no great apparent change in the available daylight, although any photographer's table of exposures shows how great the actual differences must be.

Inside any ordinary well-lit room the light seems to be practically the same from the window to the back wall and to be pretty much the same as it is out of doors. But look at the window from outside beside any light building front. All the windows (*i.e.*, the room interiors behind those windows) appear by contrast to be absolutely black. We know also by experience that upon any day when a photographic exposure of, say, one second would suffice out of doors, an exposure of perhaps five minutes might be required for a well-lit interior—a difference of 300 to 1.

Actually the light in any ordinary room lit by windows on one side drops some 90 per cent. or more between the window wall and the back wall. The fact that our eyes remain unconscious of any serious difference in such a

room is no proof that none exists. We simply cannot trust our eyes in this matter as in many others.

But this beautiful automatic adaptation of the eye does not take place to the same extent under the usual intensities of artificial light, which differs essentially in composition and colour from natural light. Whilst our eyes have developed under daylight for countless ages they have only been using artificial light for a paltry generation or two, and have apparently not learned to be tolerant of variations in it. They demand that artificial illuminants shall be adjusted to approximately that adequacy which they carve for themselves out of daylight, and they refuse to make the necessary adjustment themselves. Anything much brighter than this is painful and injurious to them, anything much less is injuriously inadequate. Such sensitiveness to the intensity of artificial light can be trained to considerable accuracy in estimating the intensity of *artificial* illumination, in spite of the well-known physiological fact that measurement by means of memory of general impressions is most unsatisfactory. Unfortunately this leads us to believe that similarly we can always measure by our visual impressions the intensity of daylight. We cannot do so at all without special arrangements, nor do so with even reasonable accuracy without special instruments. Until this fundamental fact is recognised we can neither make progress with our knowledge of the subject nor avoid unconscious perjury in ancient light cases.

The Difference between Natural and Artificial Light.

Light from the sun can reach us either in beams through clear air, from blue sky diffused by the earth's atmosphere, through clouds of varying thickness or density, and through the smoke belt of towns.

Its colour varies in each case. White light is a combination of all colours in the spectrum, each of which varies not only in wave length but also in intensity and in the vigour of its particular effect on the optic nerves.

Daylight may be considered as an orchestra of colours in which the various instruments differ in note, in loudness, and in timbre.

The combined note of the resulting harmony can be dominated more by the greens and yellows than by the softer and less insistent shades of purple and violet, just as the soft tones of the violins will be more or less overpowered by the brass instruments even when the latter are not played loudly. But the differences in colour and tone between, say, direct sunlight and light blue sky are very small as compared with the difference between even the best ordinary artificial illuminant and that form of daylight which it most resembles, such for instance as between a modern gasfilled electric lamp and sunlight.

Daylight Lamps.

Various attempts have been made to rectify this difference in order to produce an artificial illuminant which shall have the same or nearly the same effect on our eyes as natural light. But even the most brief account of the vast amount of thought and research which have been directed to this end would form a long paper, and time does not permit more than a passing reference to a branch of science in which this country has played no small part.

Suffice it to say that up to the present the only reasonably practicable method of altering the light from artificial illuminants has been to extract from it, either by reflection from bluish surfaces or by absorbtion through bluish glass, those yellowish colour elements which are too insistent, in order that we may enjoy the violet end of the spectrum as well as the remainder.

The waste thereby occasioned is comparable with having to employ an entire orchestra and then forcing the brass instruments to sit silent in order that we may hear the strings.

The best daylight lamps thus waste some 60 per cent. to 70 per cent. of the light available from the bare lamp. Extravagant as this discount appears to be, it must be remembered that we often waste as much by badly designed shades and reflectors.

Daylight lamps are invaluable for many operations involving the judging or matching of colours, such as the examination of seeds, corn, tobacco, furs, etc., and the matching and examination of textiles. Their use might well be extended to Art Galleries. In the busy, prosperous, but smoky towns of the North one often finds priceless collections of art treasures housed in palatial galleries but only visible by daylight on rare occasions.

Colour in Light.

In all the fairyland of science there is perhaps no subject which can afford us so much sheer delight for so little labour as the study of coloured lights and the effect of tinted lights upon coloured surfaces.

The painters discovered this half a century ago, and were richly rewarded. Claude Monet's " Impressions," a sunset study in the Salon des Refusés of 1863, was probably one of the first attempts to depict colour in atmosphere by a technique dimly envisaged by Velasquez. Fortunately this picture excited that bracing stimulant to achievement, the contemptuous derision of the orthodox; and drew together in protest men like Edouard Manet, Monet, and particularly Delacroix, who cheerfully adopted the derisive appellation of " Impressionists," and founded a new cult.

These men were not content to note as curious but inexplicable phenomena such facts as a sallow-faced model casting a violet tinted shadow whilst the shadow of a red faced model was greenish, why bright green grass appeared to be blue from a distance, why the white snow caps of distant mountains changed to coppery red at sunset, and similar facts. They called science to their aid and studied with avidity the difference between mixing pigments and mixing lights. Why, for instance, a mixture of blue and yellow pigments produces green, whereas the mingling of blue and yellow light gives white. Why primary colours in pigments are not primary colours in light, and the like. Their researches revealed the fact that light reflected from a series of small coloured surfaces in close juxtaposition, i.e., the coloured *lights* from such surfaces, unconsciously mingled by the eye, afforded new, beautiful, and essentially natural results, often quite unexpected. The effect of mingling a stipple of blue dots amongst a stipple of red dots, for instance, produces a yellow instead of the black which results from mixing red and blue pigments.

They acquired thereby a new outlook, a new pallette, and practically a new art; in which colour and atmosphere, instead of being merely suggested on the canvas, seems actually to live on it.

Probably no such triumph awaits the architect, but the episode is suggestively instructive; and the modern developments of colour photography and the perfection of coloured lamps open up a somewhat large field to the architect who does not think only in brick, stone, timber, and plaster, but regards landscape gardening and interior decoration, and even the colouring of exteriors, as part of his rightful heritage. He must bestir himself, however, and exert his ownership over those fields, or he may find his fee simple title encumbered with the squatters' rights of specialists.

But we must leave this entrancing theme, well worthy of a paper to itself, or we shall all be here till midnight. We can merely glance at the beautiful examples of three-colour printing and three-colour photography which have kindly been lent to illustrate this branch of the subject. They may perhaps serve to give you pleasure during the duller portions of this paper.

We have to concentrate upon these practical questions, occurring daily in practice, as to whether a given window in a given situation is large enough or too large; whether its dimensions must be varied in width or in height, and if so, to what extent, or whether an additional window is required.

Our knowledge of daylight has now advanced so far that it is possible to predetermine accurately from drawings alone to what extent any interior will be lit with any given system of fenestration and with any given degree of obstruction, and to say whether any portion of that interior will fall below the requirements of comfortable user.

Illumination.

In order to view objects satisfactorily it is not sufficient to have strong light sources in the vicinity—the light must reach the object. We must have illumination as well as light. But illumination alone is not sufficient.

We view objects not so much by the light which falls upon them as by the light which is reflected from them into our eyes; a beam of quite powerful light projected on to thick dull black cloth disappears almost completely. But reflective capacity is also insufficient without contrast. A thin glass tumbler or a thin sheet of celluloid immersed in a white china bowl full of water cannot be distinguished even under strong light.

Given any object such as a book or a sheet of paper with a reasonable coefficient of reflection, and viewed under circumstances which provide reasonable contrast, satisfactory lighting of an object depends upon—

(1) The illumination or flux of light falling on the object—which is measured in foot-candles or lumens per square foot; a foot-candle being the illumination received from one standard candle at a distance of one foot, and a lumen being the flux of light which will illuminate one square foot of surface to an intensity of one foot-candle.

(2) The ability of the object to reflect light back into our eyes, measured as "reflection coefficients," or the proportion reflected of any light falling on the object. A table of some reflection coefficients is given in Appendix I.

Horizontal and Vertical Illumination.

But no flat surface reflects light equally in all directions. If the surface be smooth or polished it conforms to the laws of specular reflection. Under a beam of light striking it at a given angle with the plane of the surface it will appear to be most brightly illuminated in a direction 180° on plan from the incident beam of light and inclined at the same angle from the surface (Fig. 1) in accordance with the well-known rule of optics that the angle of incidence is equal to the angle of reflection. In other directions only such light is reflected by the surface as is due to inequalities of the smooth surface or divergence of the incident beam.

But paper, books, and the majority of objects which it is necessary to view have dull, unpolished, or "matt" surfaces; and reflection from such surfaces differs very materially indeed from specular reflection.

A true matt surface, to which white blotting paper approximates, follows the law discovered by Lambert in 1760.

Whatever may be the angle at which a beam of light strikes it, the maximum reflection from a truly matt surface will be in a direction normal to the surface and the reflection from it in every other direction will vary directly with the cosine of the angle which that direction makes with the normal to the surface.

The light reflected in all directions measured to scale will, therefore, be limited by a circle as in Fig. 2.

Conversely, light falling upon a matt surface at an angle is less efficient in producing illumination than light which falls in a direction normal to the surface, simply because the surface presented to the incident light, like the surface available for oblique reflection, grows less and less as the angle of incidence departs from the normal (Fig. 3).

From these considerations it will be seen that as books, paper, and most objects worked upon are generally viewed in a direction nearly vertical, it follows that light from high angles is more valuable than light from directions nearer to the horizon, whether the surface viewed be polished or matt. A skylight gives more working light than a window of the same glass area, and screening the top of a window darkens a room far more than the screening of an equal glass area at the bottom.

There are, of course, additional reasons for this. In towns the zenith sky is nearly always brighter than sky nearer to the horizon where the light from the sky has to pierce a greater thickness of smoke belt (Fig. 4).

Still more important is the fact that obstructing buildings almost invariably block out sky from low angles, and generally the only available sky is visible through the upper panes of glass. It will be shewn later that visible sky is the dominating factor in natural illumination.

For viewing objects in a horizontal direction, such as bookcases, pictures on walls, wall bins in stores, packing cases with labels on the sides, etc., horizontal illumination is, of course, more valuable than vertical, but in the sum total of ordinary human requirements these do not bulk largely.

Point and Luminous Surface Sources of Light.

It is very necessary to appreciate that the laws of optics as usually stated in text books refer almost invariably to point sources of light, a condition which is seldom or never found in practice.

For example, the well-known law of inverse squares by which we know that the illumination from a point source of light falls off inversely as the square of the distance from that point (Fig. 5) does not operate when the source of light is a surface, such as an area of sky, a light building front, or an illuminated wall or ceiling.

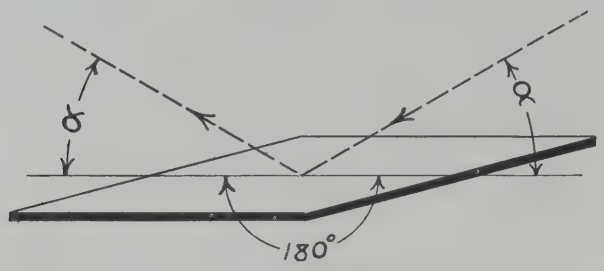


Fig. 1.—Specular Reflection

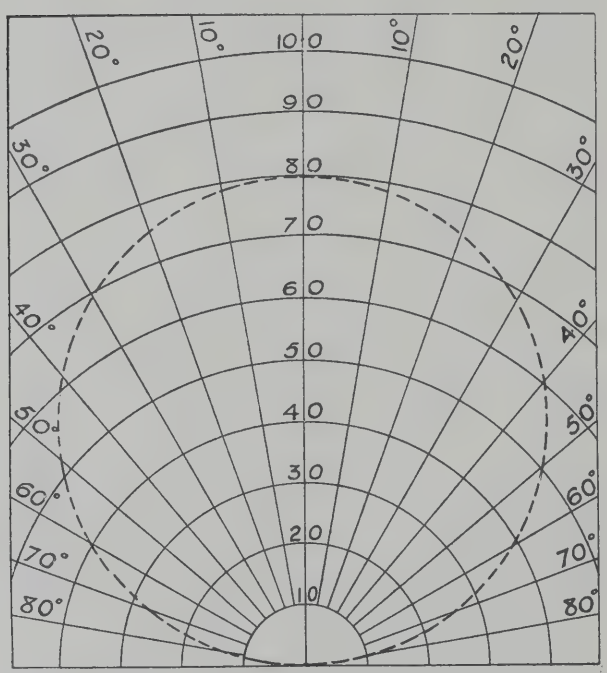


Fig. 2.—Diffuse Reflection from Matt Surface

Curiously enough, the illumination from a window received from unobstructed sky directly visible from that window does fall off approximately in inverse proportion to the square of the distance from the glass, but that is merely because the area of sky visible as we go further from the window happens to decrease approximately in that proportion.

As both the width and the height of any sky visible decreases directly with the distance, the illumination due to the *area* of visible sky would vary inversely with the square of the distance, were it not for the fact that sky varies in its lighting capacity according to its angular elevation above the horizon, high angle sky being the more valuable for vertical illumination on a horizontal plane, and low angle sky for horizontal illumination on a vertical plane.

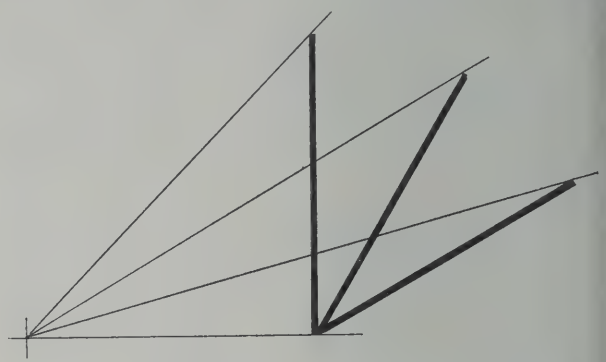


Fig. 3.—Projected Area of Reflecting Surface

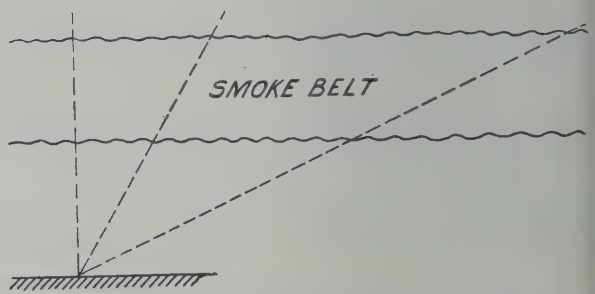


Fig. 4.—Penetration of Smoke or Cloud Belt by Sunlight

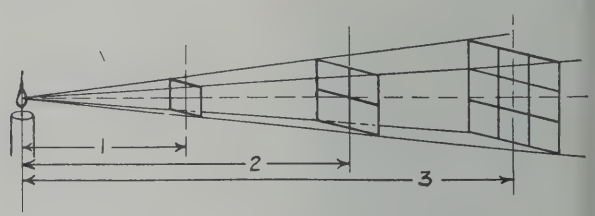


Fig. 5.—Law of Inverse Squares

When, however, the visible sky is obstructed by a building distant from the glass, as on the farther side of a road, this, of course, does not hold good. As we go farther back from the glass the angular elevation of the window head decreases more rapidly than the angular elevation of the obstruction (Fig. 6).

PHOTOMETERS.

It has been stated that the human eye is an extraordinarily inaccurate judge of daylight by general or memorised comparisons. Yet if daylight is to be measured it must be by the eye.

In the instruments known as photometers used for measuring illumination, whether natural or artificial, advantage is taken of the ability of the eye to distinguish quite a minute difference between the brightness of two small contiguous surfaces.

Practically all such instruments illuminate one of such two contiguous surfaces by means of a measured variable proportion of the light emitted by a small standard electric lamp, whilst the other surface receives the illumination to be judged by comparison.

Suitable means are adopted whereby the variation in the standard light is indicated in foot candles. One or two well-known forms of portable illumination photometers are described and illustrated in Appendix II.

Photometric apparatus for measuring the candle power of lamps, analysing colour constituents, etc., are necessarily larger and more complicated, and being used mainly for laboratory work need not be described here. By any of the small portable photometers described, or even by means of a small photographers' exposure meter properly calibrated, an architect can measure and record or memorise degrees of illumination which he finds to be satisfactory or the reverse. Especially useful are they in drawing attention to the matters which prejudice our judgment.

It is, for example, extremely instructive to find that a room with a particularly tinted wall paper or furniture gives an impression of cheerful lightness which is absent in a similar room differently decorated or furnished, but possibly enjoying actually even more light.

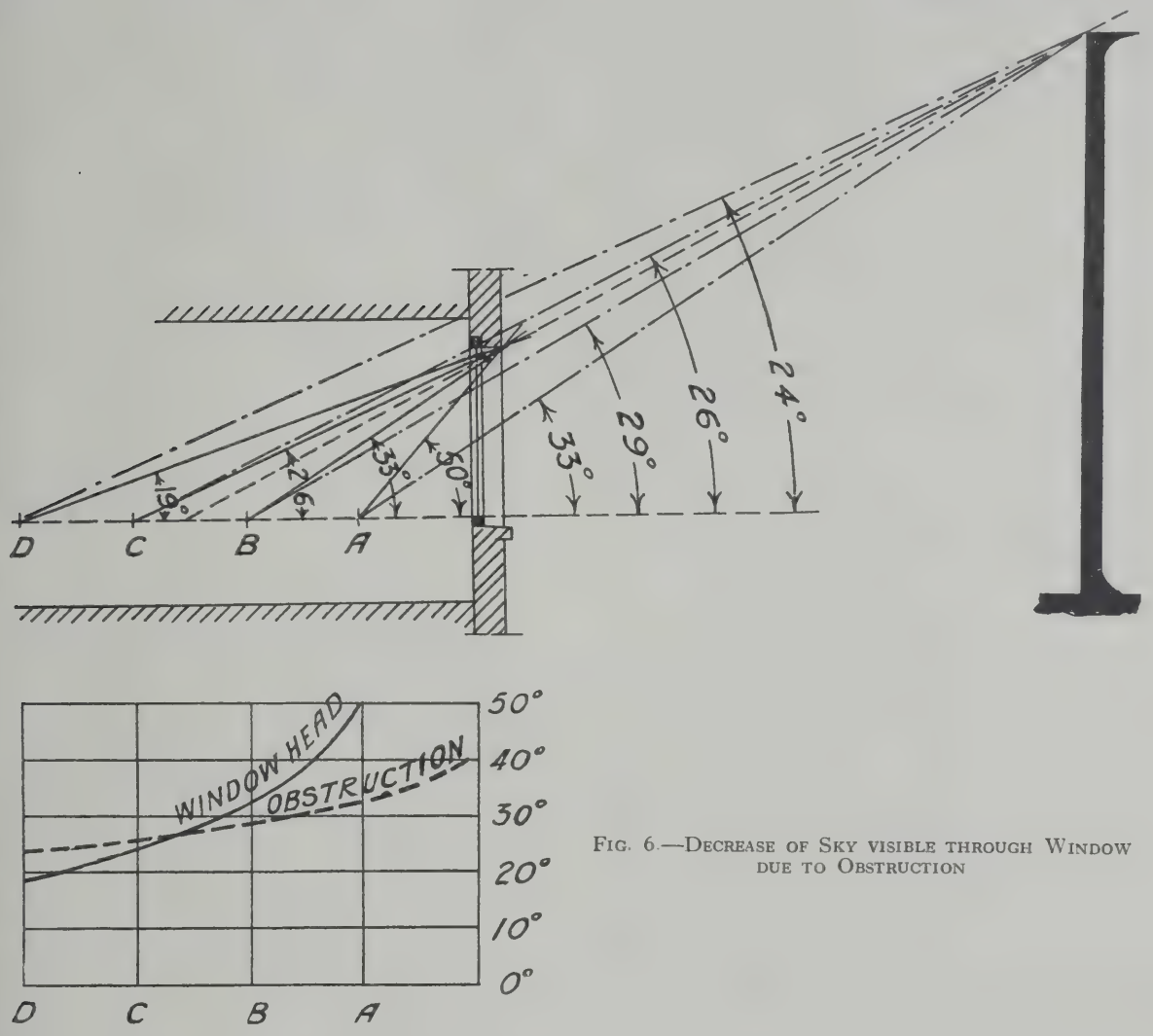


FIG. 6.—DECREASE OF SKY VISIBLE THROUGH WINDOW DUE TO OBSTRUCTION

It is undoubtedly the fact that we generally judge and value illumination, both natural and artificial, not so much by our ability to work under it as by the apparent brightness of those objects or surfaces which chiefly force themselves on our attention.

It is this psychological aspect of illumination which is, I suggest, the peculiar province of the architect. It is an intensely interesting subject, almost unexplored, but of the greatest importance. We may be able to measure the candle power of our lamps in all directions to small fractions; we can predetermine the illumination given by them on working planes with great accuracy; ophthalmic surgeons can tell us the upper and lower limits of suitable illumination for given conditions of working; but all this exact work, interesting and necessary as it is, will not answer the extremely important question as to whether the user is going to *feel* that he has a proper or even a comfortable light. That depends—at least until lengthened experience has corrected his views—very largely, in fact almost entirely, upon the surface brightness of prominent or arresting features of the room, and this is very largely in the hands of the architect.

The study and analysis of cheerfulness by the architect in the light of such knowledge and data as the illuminating engineer can supply would appear to be of first-class importance.

The writer therefore ventures to commend the more general study of illumination effects by means of these simple and handy little instruments.

No architectural school at least should be without one, and the means of keeping it correctly calibrated.

Natural Illumination.

Seasonal and Diurnal Variations.

Few people except expert photographers are aware of the enormous differences of daylight between dawn and sunset and between December and June.

Figs. 7 and 8 give the results of a series of measurements made in connection with the Home Office Inquiry into the Lighting of Factories.

The values given represent the apparent brightness of a white card lying horizontally on a flat, unobstructed roof and receiving all light from a complete hemisphere of sky. This is nearly the same as the average brightness of all parts of that hemisphere. It would be exactly the same if the card could reflect all incident light and absorbed none. The values are double what would be recorded on a card laid on an unobstructed window sill or stood vertically on a roof, under which circumstances it could, of course, receive light from only a quartersphere of sky. Further investigations were carried out daily last year at the National Physical Laboratory, Teddington, the observations being made in a fitting which restricted the light falling on the card to that from an octant of sky facing either N, S, E, or W. The average plotted curves for each month for each aspect, together with the figures for particular days representative of different kinds of weather, have kindly been supplied to the author by the Director.

The differences between aspects are very interesting, but they are, after all, only the average for one year, and that a somewhat exceptional year, at Teddington, a semi-rural district, and necessarily differing materially from the light which was enjoyed over the same period in London, Leeds, Manchester, or any other of the crowded industrial districts where the perennial fight for light and air goes on under ever increasing disadvantages.

For comparison with the earlier records, Figs. 7 and 8, the author has added together the average light from all four octants and plotted them on Fig. 9.

The author has ventured to urge the authorities at Teddington to make some effort to obtain correlated observations at London, Manchester, etc., and to compare these with the records of the Meteorological Office of solar radiation, height and character of clouds, atmospheric pollution, etc.

If the latter records should, when properly applied, serve to account for the departures from a theoretical curve based on the sun's altitude, then light records could be built up for any place for which records exist, and averages could be struck for periods as lengthy as the records.

It is understood, however, that it may be necessary to wait until a few years' records had been collated at Teddington. The author has, therefore, attempted the investigation himself in the rare intervals of leisure afforded by a somewhat busy practice. It is not yet completed, but the result so far is hopeful.

The author desires to record his indebtedness to Dr. Chree, of Kew Observatory, the nearest Meteorological Office station to Teddington, who has afforded him every possible assistance in the compilation of data for this purpose.

Principles of Measuring Daylight.

In spite of its huge variations the daylight illumination of any interior can be expressed in very simple terms.

A window, a skylight, or an opening can never do more than convey to an interior position a proportion, and only a very small proportion, of the outside light; so that out of doors there may be, not two or three times the indoor light, but two or three hundred times. Under certain circumstances it may be about a thousand times as much without our eyes being able to appreciate much difference. Most fortunately with a sky uniformly bright, this proportion—known as the daylight ratio or daylight factor—does not differ from sunrise to sunset or from June to December. If a given position enjoys a ratio of, say, 1 per cent. it will have 10 foot candles when the outside light is 1,000 foot candles. When the outside light is 100 only it will have 1 foot candle.

It is generally expressed as the ratio between the brightness of a white card laid on an unobstructed window sill (which is very nearly half the sky brightness) and the brightness of the same card placed at any interior position.

It can also be predetermined, in so far as it depends on light direct from the sky, by plotting upon a suitable diagram a simple geometrical projection of any sky visible from such an interior position.

The diagrams used are of the forms shown in Figs. 10, 11, 12, and 13. They indicate a flat projection of a quartersphere of sky divided horizontally and vertically into square degrees.

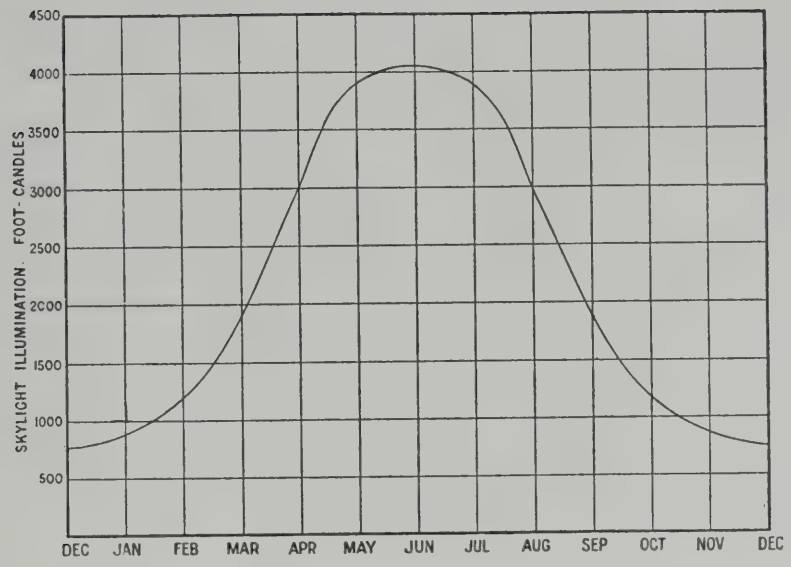


FIG. 7.—SEASONAL VARIATIONS OF NOON DAYLIGHT
Home Office Report on Factory Lighting, 1914

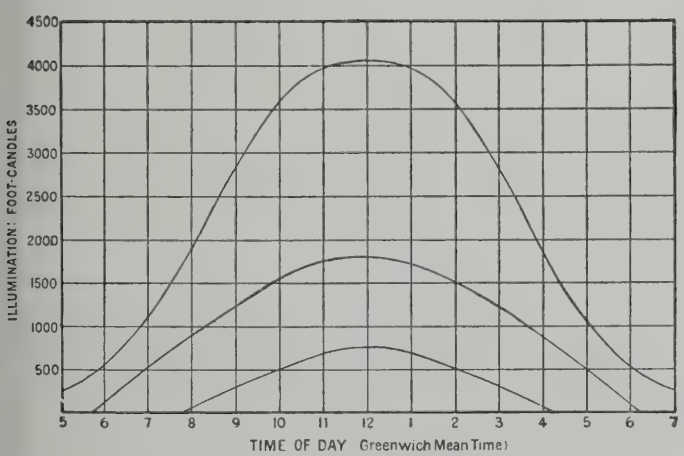


FIG. 8.—DIURNAL VARIATIONS OF DAYLIGHT, MIDSUMMER, EQUINOXES, AND MIDWINTER
Home Office Report on Factory Lighting, 1914

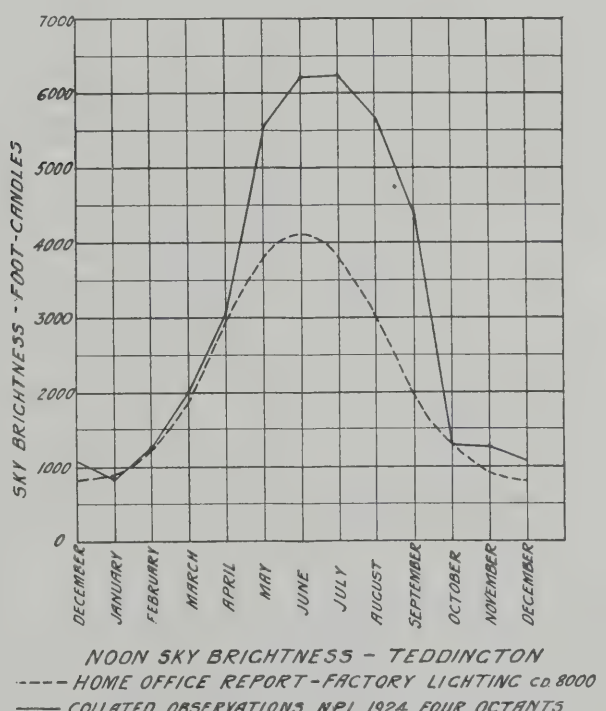


FIG. 9.—SEASONAL VARIATIONS OF NOON DAYLIGHT, TEDDINGTON, 1924

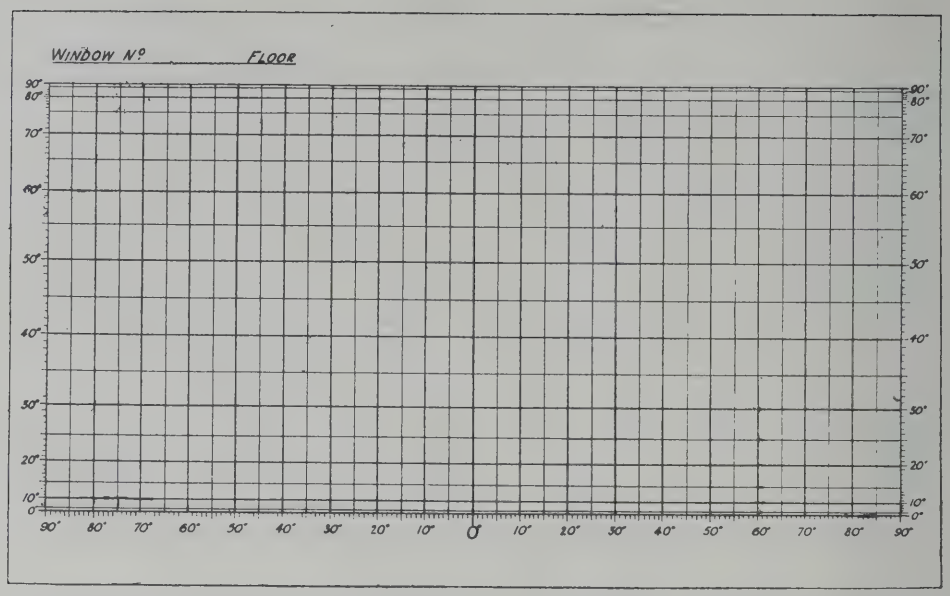


FIG. 10.—DIAGRAM FOR CALCULATING DAYLIGHT RATIOS. Illumination Measured Vertically on Horizontal Surfaces

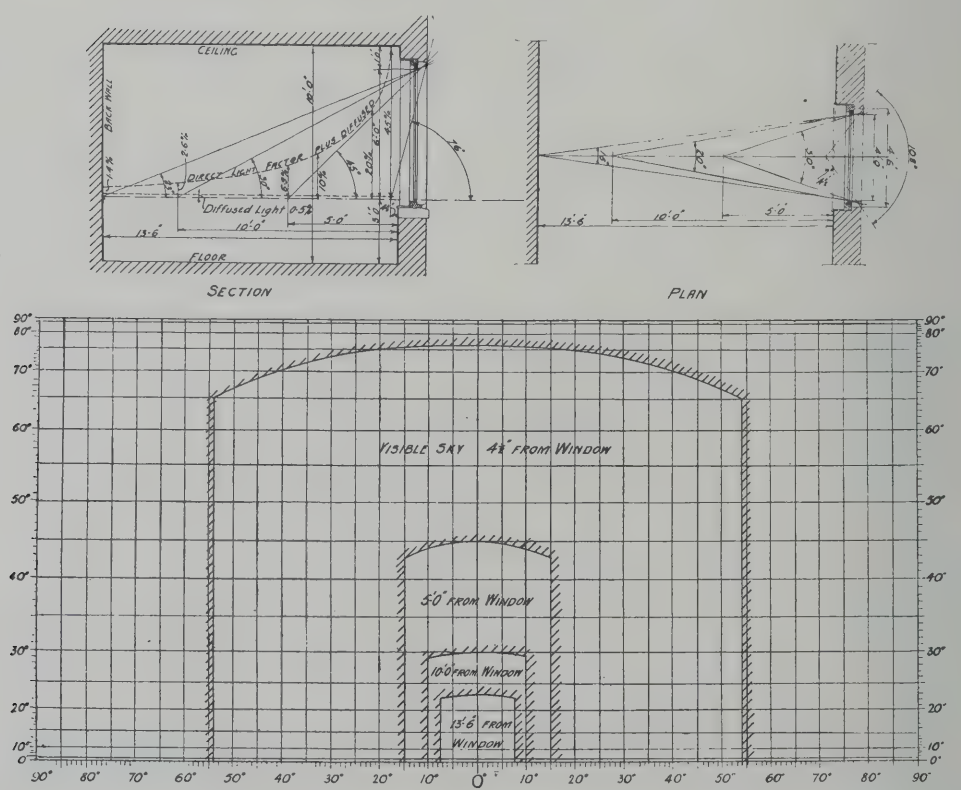


FIG. 11.—EXAMPLE OF USE OF DIAGRAM FOR CALCULATING DAYLIGHT RATIOS ON HORIZONTAL SURFACES

It will be noticed that the vertical divisions are not regular. That is because they have been adjusted geometrically to allow for the different lighting capacities of sky at different degrees of elevation. If the size of the diagram is, say, 20 inches by 10 inches = 200 square inches, divisions are adjusted for illumination falling vertically on a horizontal surface such as a book or table. In Fig. 12 they are adjusted to illumination falling horizontally on a vertical surface such as a picture, a bookcase, or some forms of textile machinery. In Fig. 13, the angular divi-

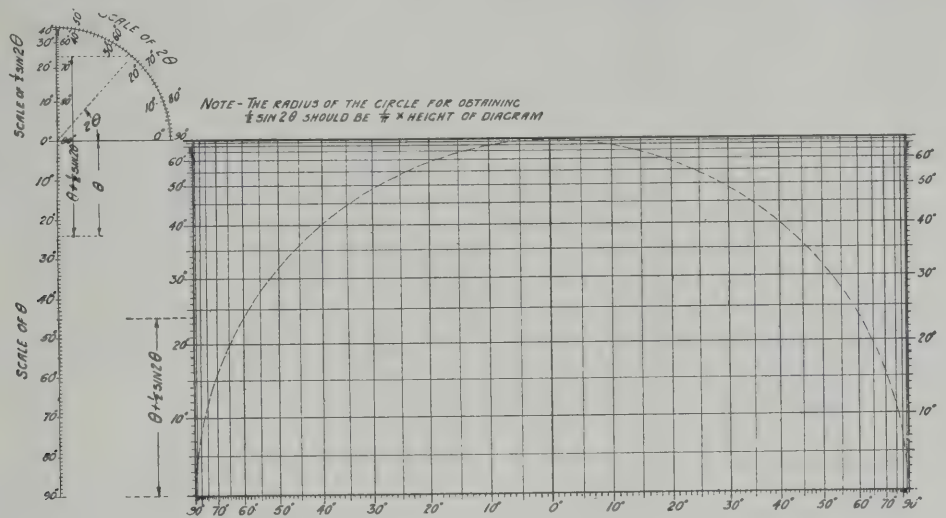

NOTE - THE RADIUS OF THE CIRCLE FOR OBTAINING ½ SIN 2θ SHOULD BE ¼ × HEIGHT OF DIAGRAM
SCALE OF ½ SIN 2θ
SCALE OF 2θ
SCALE OF θ
θ + ½ SIN 2θ

FIG. 12.—DIAGRAM FOR CALCULATING DAYLIGHT RATIOS
Illumination Measured Horizontally on Vertical Surfaces

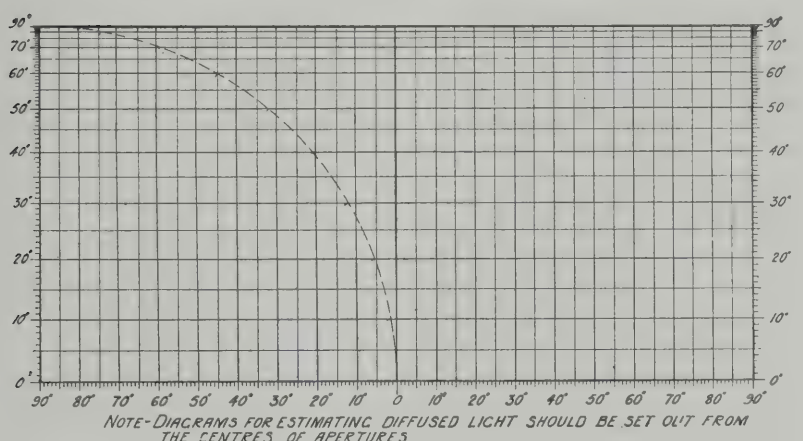


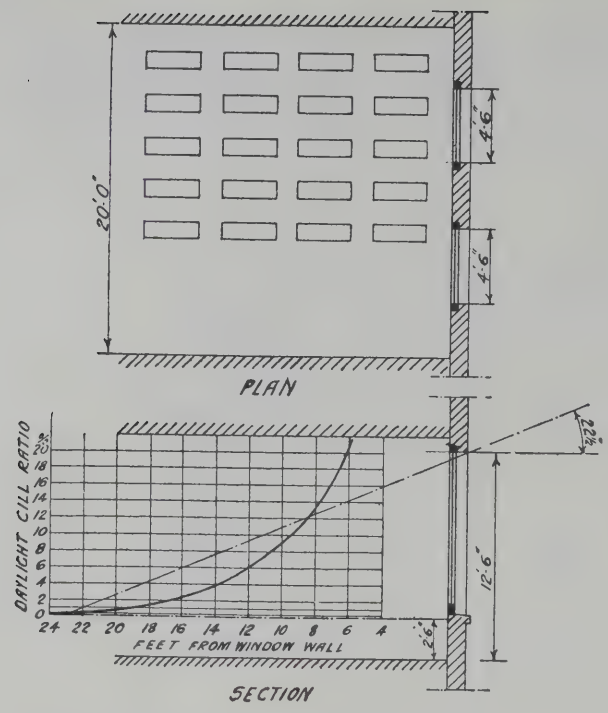
FIG. 13.—DIAGRAM FOR CALCULATING DAYLIGHT RATIOS DUE TO DIFFUSE REFLECTION FROM WALLS AND CEILING

then every square inch of it, wherever situated, will represent ½ per cent. of the lighting capacity of the complete quartersphere of sky.

If the sky area visible from an interior position through a window be projected on to such a diagram by means of its horizontal and vertical angular limits, then the area so projected measured in square inches represents exactly the daylight roof ratio at the point in question multiplied by four, or its daylight sill ratio multiplied by two. In the form of diagram shown in Figs. 10 and 11, the angular sions are adjusted to give equal values for light diffusely reflected from walls, etc.

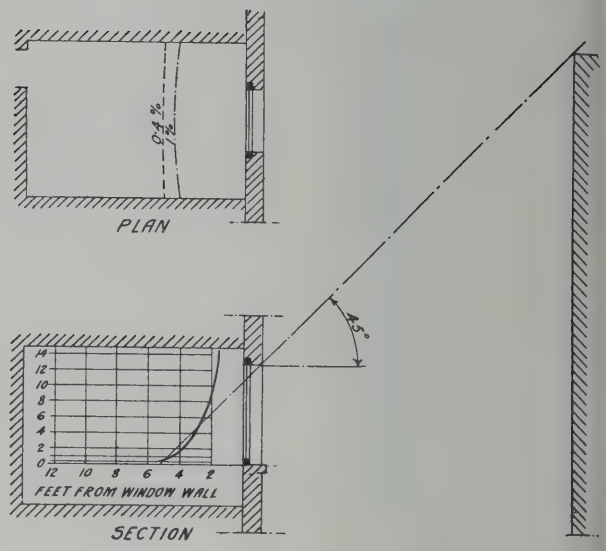
The simple methods of constructing these diagrams and the mathematical proof of their accuracy are described in a paper read by the author and his son at the Illuminating Engineering Society, April 1922, and now published by Messrs. Batsford.

In order to ascertain the distribution of light in an interior a number of suitable points are selected and the sky visible from such positions is projected and measured.



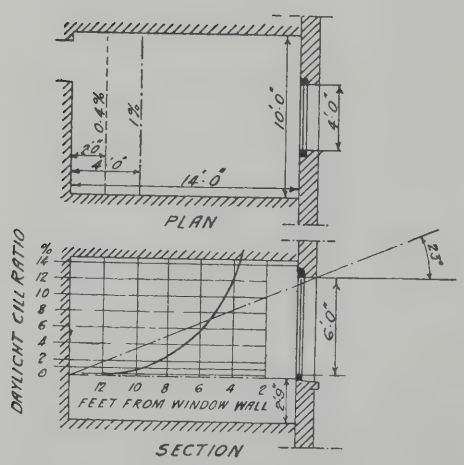
ELEMENTARY SCHOOL CLASS ROOM
OBSTRUCTION 80'-0" DISTANT SUBTENDING 22½° AT WINDOW HEAD

I



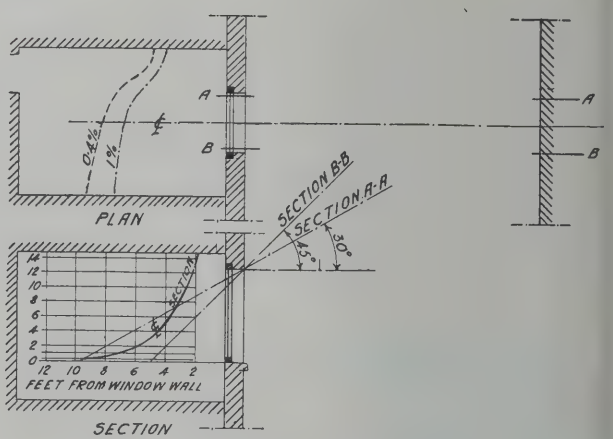
SINGLE WINDOW OFFICE 14'-0" × 10'-0"
OBSTRUCTION 20'-0 DISTANT SUBTENDING 45° AT WINDOW HEAD

III



SINGLE WINDOW OFFICE 14'-0" × 10'-0"
OBSTRUCTION 40'-0" DISTANT SUBTENDING 23° AT WINDOW HEAD

II



SINGLE WINDOW OFFICE 14'-0" × 10'-0"
OBSTRUCTION 20'-0" DISTANT SUBTENDING 45° + 30° AT WINDOW HEAD

IV

FIG. 14.—DISTRIBUTION OF DAYLIGHT IN TYPICAL ROOMS

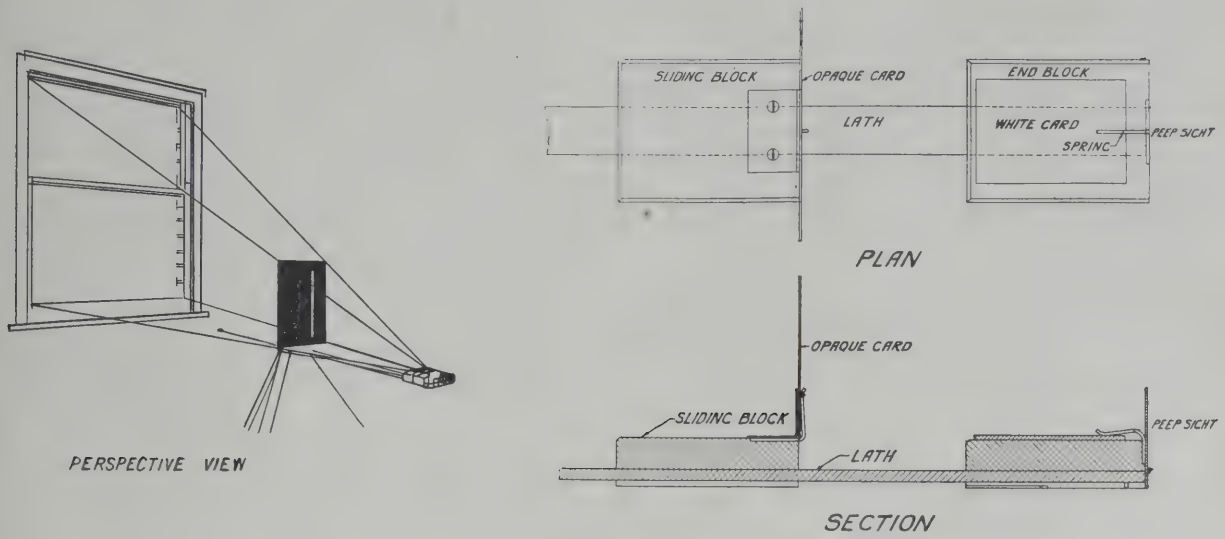


FIG. 15.—APPARATUS FOR MEASURING DIFFUSELY REFLECTED LIGHT

From these values " sections " of light can be plotted, and from these curves contour lines indicating any given limit of direct daylight ratio such as 0.4 per cent., 1 per cent., 5 per cent., etc., can readily be drawn.

Fig. 14 shows the typical light sections of :—

(1) An elementary school class room,

(2) An ordinary office adequately lit from the front nearly to the back,

(3) The same obstructed to an angle of 45° from the window head,

(4) The same obstructed partly to 60° and partly to 30°.

LIGHT DIFFUSELY REFLECTED.

In addition to light directly received from visible sky, which can readily be computed, there remains the light which is received by diffuse reflection from :—

(*a*) The walls, ceilings, furniture, etc., of interiors, part of which is received from a first reflection and part after single or multiple counter reflections.

(*b*) Building fronts, part of which is light received by such fronts direct from the sky, and part by reflection from other fronts. The latter is more obvious in a light well.

Excessive value is often attributed to the amount of useful light obtained by diffuse reflection. Light coloured surfaces, whether inside or outside, undoubtedly add very materially to the cheerfulness of an interior position. They also add something to its useful light, viz., the light which determines lighting up time and the ability to see and work on dull days, and are of value to positions which have nothing to spare.

But their value as a source of useful light is very small, decidedly less than that of even a small patch of visible sky, and is generally much over-rated.

They often serve to make people believe that the light is good, so that it is for example difficult to believe, at least on a sunny day, that in a small kitchen with a light coloured varnished paper, a clean white ceiling and a large window obstructed by a white freshly stuccoed wall is not a well lit room. It requires experience at sunset and on dull wet days to show that the absence of visible sky cannot be compensated by bright surfaces.

Light received by diffuse reflection from interior walls and ceilings can readily be measured by the simple apparatus shown in Fig. 15.

The direct light from the window being shut off, that which remains on the card must be the total of the light received from interior diffuse reflection.

This has been measured in a number of cases both by the author and the N.P.L., and Fig. 11 shows what a small addition it makes to the total light.

But we must not despise small things merely because they are small.

Situations which enjoy no direct sky at all—and there are hundreds, perhaps thousands, of people condemned to work in such places in every crowded town—can be either intensely gloomy and depressing or they can be cheerful and at least apparently bright. It is the architect who can make the difference by careful and intelligent study of reflection coefficients, of apparent brightness, and of beneficial or deleterious contrast, aided by his invaluable training in general effects which are pleasing or the reverse.

REFLECTION FROM BUILDING FRONTS AND LIGHT WELLS.

As regards reflection from building fronts, it will be obvious that any white unobstructed vertical surface can never be more than half as bright as a white unobstructed horizontal surface, because the latter receives light from a full hemisphere of sky, whilst the former can only see a quartersphere. They may appear to be almost equally bright, but the loss is there.

But a vertical wall could only be half as bright as any sky it displaces if it reflected all incident light and absorbed none, *i.e.*, if its coefficient of reflection were 100 per cent.

But even new clean white glazed bricks or new white-

wash can reflect only some 60 per cent. to 70 per cent., so that they would only be about one-third as bright as displaced sky if unobstructed.

They never are unobstructed, however, especially in the most valuable direction at right angles to the surface, near the horizon ; and when we consider the amount of sky cut off from any reflecting wall surface by, say, the opposite side of a street, or the walls of a light well, it will be obvious that the 30 per cent. or thereabouts of an unobstructed vertical new white glazed brick or white-

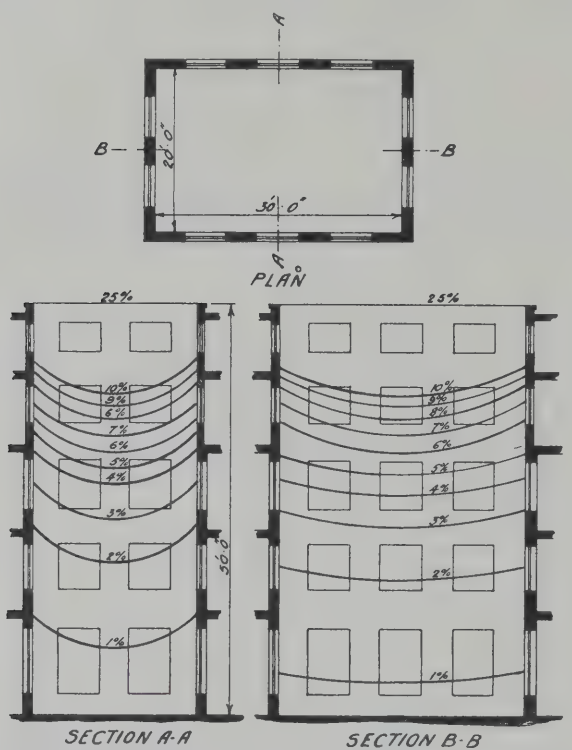


Fig. 16.—Apparent Brightness of Walls of Light Well

washed wall can seldom average much more than about 10 per cent., and this rapidly deteriorates unless the bricks are periodically cleaned or the whitewash periodically renewed.

In addition there is, of course, light received by the wall from other building fronts, as in a glazed light well, but our knowledge of the relative values of direct and diffused light in rooms shows that this factor must be extremely small.

For all practical purposes a window looking out on to the walls of a light well or across a road on to a building front is looking out on to an artificial sky which will always be much less bright than the actual sky at any given time.

Its brightness relative to the actual sky can be ascertained by setting up sky projections from a sufficient number of points—treating the light well or the roadway as a room stood up on end—with one side, in the case of a light well, completely open as Fig. 16.

Values corresponding precisely to the daylight roof ratio of a horizontal room could thus be attributed to every course of bricks if necessary round the light well.

These, multiplied by the reflection coefficient of the wall surface, will obviously give the varying brightness of the light well walls at different heights as a proportion of the sky brightness. As the reflection coefficient can only be an average between cleaning periods, during which it may easily vary by 30 per cent. or 40 per cent. or more according to the weather, it is obviously rather a work of supererogation to trouble about the small addition afforded by diffuse reflection from side to side of the light well. But if desired an addition of, say, 5 per cent. may be made for this.

The amount of light obtained at any interior position condemned to see nothing but the inspiring prospect of a blank wall instead of sky can by this means be ascertained if necessary with very fair accuracy.

Sunlight.

Considerations of space and time prevent the discussion of the highly interesting subject of sunlight and aspect, which is, therefore, relegated to Appendix III. This will be found on examination to be far more simple than it appears to be.

Determination of Practical Problems in Natural Illumination.

The first consideration in determining all practical questions in daylight illumination is the amount of light which reasonable people require for various purposes.

It will have been obvious from Figs. 7 and 8 that Nature provides for long periods quantities of light very considerably in excess of that which is available at times when most people would consider the light out of doors to be quite good.

Obviously, therefore, the proportion of the light outside which must be admitted by windows or skylights must be determined with regard to dull days in winter rather than bright clear days, and with regard to the times near sunset rather than middle day.

It is, therefore, necessary to fix upon a value of sky brightness which shall fairly represent moderately dull but not abnormally dull weather, when reasonable people would reasonably expect enough light indoors for ordinary purposes.

From the meagre official information available the writer has for some years adopted, *faute de mieux*, the reading of 600 foot candles to represent this sky brightness, equivalent to a reading of 500 foot candles on an unobstructed horizontal white card having a reflection coefficient of 83 per cent., or a reading of 250 foot candles on the same card standing vertically or observed on an unobstructed window sill.

This represents approximately the sky brightness on an ordinary wet day in spring and autumn in the country, and in the summer in towns, and in the country at about an hour, and in towns about 1½ hours, after sunrise and

before sunset on fine days. It is rarely exceeded throughout the day in winter in towns except on quite fine days. The more exact data which we hope for may, of course, alter this very important standard.

The amount of illumination in foot candles recommended by various authorities for artificial light varies considerably. Making due allowance for the fact that some self-constituted authorities are financially benefited by high degrees of illumination, and that absolute perfection is not always economically possible, the values recommended by the last report of the Home Office Committee on Factory Lighting may be taken.

They are 3 foot candles for fine work and 5 for very fine work.

The author's experience is that most people require rather more artificial light for any given purpose than

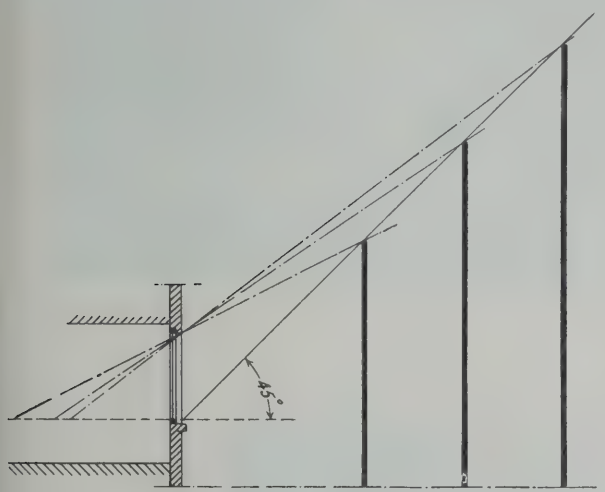


Fig. 17.—Varying Effect on Lighting of Interiors by Window Obstructions subtending 45° at Sill

the amount of natural light which will satisfy them, at least in the failing light of dusk.

Taking 1 foot candle of daylight as the average minimum requirement of adults for clerical work and for ordinary purposes and 2½ foot candles for fine work or the eyes of very young children in schools, it follows that adequate light requires a minimum daylight sill ratio of 0.4 per cent. and good light a minimum daylight sill ratio of 1 per cent.

This assumption, which the author has invariably applied in ancient light disputes for many years, received a valuable and welcome confirmation when the actual conditions existing in new public elementary school rooms built to the structural rules of the Board of Education were reduced to terms of sill ratio in 1913, by a Committee of Medical Officers, Scientists, and Illuminating Engineers appointed by the Illuminating Engineering Society.

The sill ratio of the worst lit desk in new class rooms in this country was found by measurement to be 1 per cent., whilst precisely the same value was found to be involved by the recommendations or regulations of school authorities on the Continent and in America, all of which, like the British structural rules, had been arrived at by the evolution of gradual trial and error.

The value of 0.4 per cent. sill ratio is also in accordance with the rough rule often adopted in ancient light cases to the effect that any point in an interior from which all sky is cut off at table height is necessarily inadequately lit.

All such positions must depend wholly upon light diffusely reflected from walls, ceilings, or building fronts, and numerous tests show that this seldom exceeds 0.2 per cent., even with moderate degrees of obstruction.

The 45° Rule in Ancient Light Cases.

The well-known so-called " 45° rule " in ancient light cases is fallacious except in what the author believes to be its original form, viz., 45° to the sill of the lowest window in order to ensure less than 45° to the head of that window (the head and not the sill being the really essential point as regards loss of sky), and of course still less to the window heads of upper floors.

Misapplied as a criterion of obstruction to any window, 45° from the sill can cover, as shown in Fig. 17, quite a number of totally different degrees of real sky obstruction according to the height of the window head and/or the distance of the obstruction.

Lateral and Direct Light.

Many architects draw a distinction between lateral and direct light. There can be none, for all light is more or less lateral. The only " direct light " or light at right angles to window glass which can reach an interior position is a beam of no width and therefore of no area. In so far as it can reach into a room even severely lateral light is as useful as light from any other direction. For this reason all the horizontal angles in the diagrams Figs. 10 and 13 are given equal values.

Use of Calculating Diagrams.

The application of all these considerations to the problem of proper fenestration involves a certain amount of trial and error, but it is not necessary for the designer to set up innumerable diagrams, or to contour the plans of all rooms.

Given any desired system of fenestration and window head height, a typical position of worst lighting can generally be located readily by inspection.

If there be no obstruction, then one diagram set up from table height on tracing paper over a 20 in. × 10 in. diagram, Fig. 10, will show at once by the fact of the visible sky measuring more or less than 1 square inch on the diagram whether the worst lit position has a sill ratio of more or less than 0.5 per cent., by no means a terrible operation. If the window is obstructed, then a line on section joining the top of the *lowest* obstruction to visible sky to the top of the glass and continued down to table height shows how far forward in the room the " no sky " position will extend.

The " grumble point " of 0.4 per cent. will be in front of this by a short distance which depends upon the width of the glass and the nature of the obstruction.

In the country people expect adequate light right to the back of a room. In towns they are satisfied with adequate light to all reasonable working positions. For this reason in towns a small office room adequately lit for

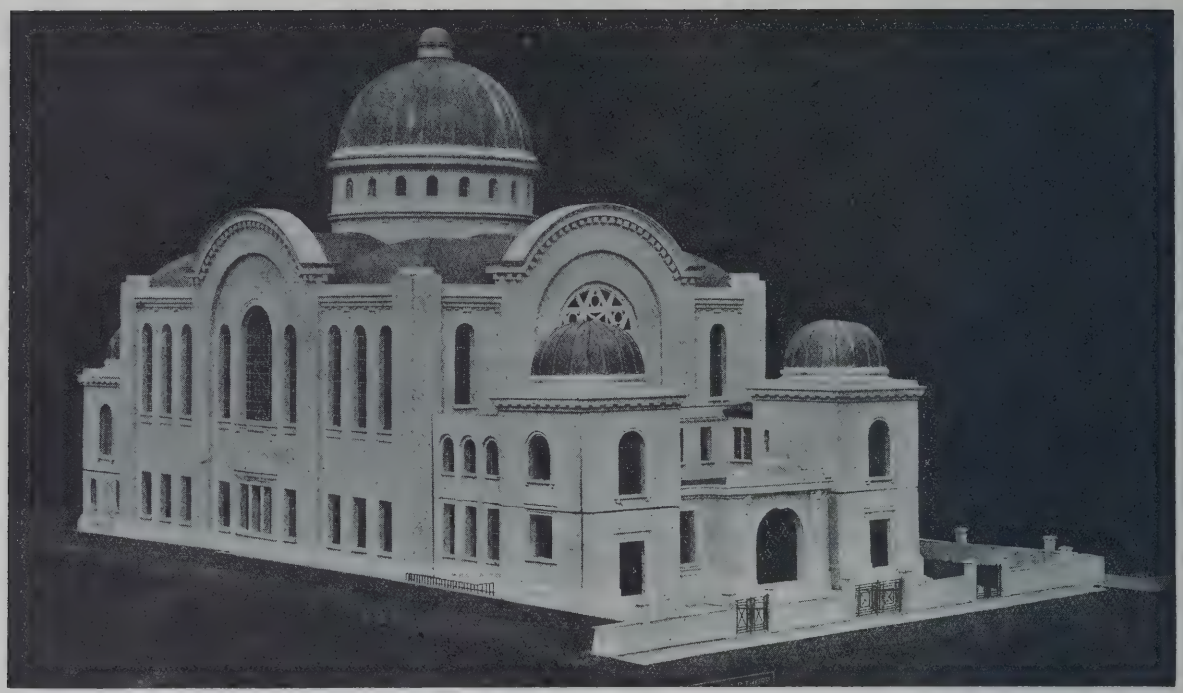


FIG. 18.—PHOTOGRAPH OF THE MODEL OF THE EXTERIOR OF WITHRINGTON SYNAGOGUE, MANCHESTER, AS DESIGNED BY MR. DELISSA JOSEPH, F.R.I.B.A. (COPYRIGHT RESERVED)

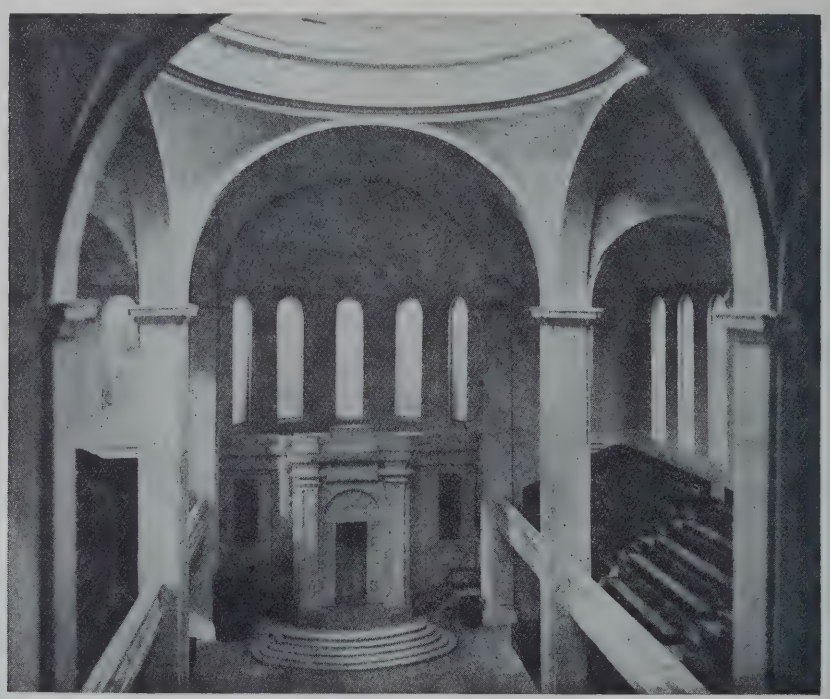


FIG. 19.—PHOTOGRAPH OF THE INTERIOR OF THE MODEL OF WITHRINGTON SYNAGOGUE, MANCHESTER, AS DESIGNED BY MR. DELISSA JOSEPH, F.R.I.B.A. (COPYRIGHT RESERVED)

only half its depth will satisfy many people. Large rooms or rooms with working positions farther back require deeper lighting.

It must always be borne in mind that any hard contrast between dark and light portions of the same room not only gives an impression of bad lighting, but is actually bad; because the eye unconsciously adapts itself to the brightest object in its field of view, and according to the extent to which it is thus "light adapted" to a patch of visible sky or a well lit table under a window, it is less able to see properly in darker parts.

For this reason top lighting by small skylights, which are apt to give very hard contrasts, is seldom satisfactory; and severe cases of obstruction to side windows which leave only a small well-lit patch under the window cannot be considered as merely cases of restricted working space. Sometimes it will be found that a small modification of the fenestration will effect a vast improvement. The kitchen of many a semi-detached suburban villa could be saved by a small window across the angle of the wall.

Unnecessarily low window heads are the most frequent cause of bad lighting, but sometimes even a window bulkheaded up into the floor above will be insufficient to give visible sky to important positions.

Faced with this difficulty the only thing is to make the best of a situation in which adequate lighting is impossible.

Reflecting mirrors or preferably prism glass catching beams of light from directions too vertical to get into the room are useful *so long as they are kept clean*; but the direction of such deflected light is unnatural and the inevitable glitter of specular reflection is bad.

Beyond this all that the architect can do is to provide light-reflecting surfaces inside and outside and to impress on his client the importance of frequent cleaning or renewal, and above all the very frequent cleaning of window glass. In towns a loss of light of 10 per cent. to 15 per cent. per month due to uncleaned glass alone is quite a moderate estimate. In winter it may amount to 10 per cent. in a week in towns, and in foggy weather even more. Where light is scanty and precious this is no small item.

The Use of Models in Predetermining Natural Lighting.

The investigation of positions in an interior and the drawing of contour lines on a plan, although more or less essential to prove evidence in ancient light cases, is a tedious and not very satisfactory method of visualising the general effect of any system of fenestration for a large interior.

The use of scale models, first suggested by Prof. Rudzicka in 1910, was long advocated by the author, and in 1912 with the invaluable aid of Prof. Clinton he was able, by means of an exhaustive series of experiments at University College, to establish the truth of the proposition that the natural light inside accurate scale models was identical with the light in the full size rooms which they represented.

The large daylight building at Teddington was designed primarily to receive large scale models of rooms, picture galleries, etc., for investigation.

The interior of scale models can with due precautions readily be photographed. By the courtesy of Mr. Delissa Joseph the author is permitted to illustrate the photograph of the exterior and interior of a scale model by Mr. Thorpe of a large synagogue (Figs. 18 and 19).

The interior photograph was actually taken with a portion of the dome removed to compensate for the fact of the photograph being taken indoors, so that it is not necessarily an accurate test of the lighting provided by the design.

It serves, however, to illustrate the strikingly lifelike results which can be obtained merely by projecting a camera through a window or preferably a prepared aperture in the wall of a model.

Picture Gallery Lighting.

The subject of lighting picture galleries has been treated somewhat exhaustively in the Transactions of this Institute.

The simultaneous tasks of avoiding glare and reflections from ceiling or side lights at high angles, and from spectators at low angles involve problems which can readily be solved by the methods described in this paper. High angle reflections can be avoided by keeping the picture glass outside the optical limits of specular reflection from high lights. Low angle reflections can be minimised by insuring that the lighting value of sky subtended at spectators (*i.e.*, its area when projected on to one of the diagrams described herein) shall be as small as possible as compared with that of sky subtended at the picture glass.

The foregoing is merely a cursory résumé of the work which has been done of late years to add to our stock of knowledge of daylight and its measurement. It is a subject which has been most unduly neglected, but which should be full of interest to the architect.

This country has nothing to be ashamed of as regards its contributions to what may be called the exact physical and physiological data. It remains for British architects to supplement its even more important psychological aspect.

Artificial Lighting.

We can now turn with some relief from the perplexing variations and contradictions and the unexpected prejudices which make the subject of daylight so difficult to the more sober subject of artificial lighting, which in its modern forms is practically free from changes and fluctuations and is amenable to far simpler rules.

You will doubtless be relieved to learn that its treatment will be brief.

First it is necessary to draw a sharp distinction between the measurement of light sources in standard candles and the measurement in foot candles or lumens per square foot of the illumination afforded by such light sources.

The first is a fixed quantity, the second varies with direction and distance.

A foot candle being the illumination received by a surface every part of which is distant 1 foot from a point light source which in all material directions is equal to that of 1 standard candle, the surface in question must be part of the interior of a sphere of 1 foot radius. The light of 1 candle at the centre of a sphere of twice that radius would, therefore, be spread over four times the area. Its illuminating capacity would, in consequence,

be reduced to one fourth, *i.e.*, illumination varies inversely as the square of the distance.

This well-known law of inverse squares is only approximately correct for luminous surfaces such as gas mantles, translucent globes, etc.

In addition to this difficulty all known light sources

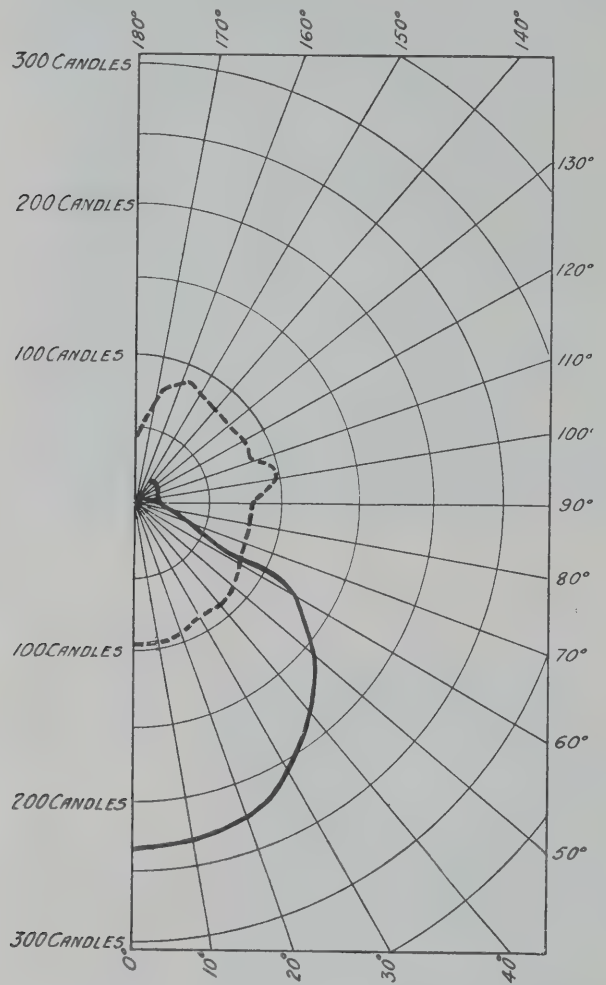


Fig. 20.—Polar Curves of Electric Gas-filled Lamp, Bare and in Fitting

emit light unevenly. Fig. 20 shows the polar curve of the light emitted by a gas-filled lamp in vertical section and of the same lamp in the fitting indicated. Fig. 21 shows similar polar curves defining the light from a triple bare gas mantle and the same in the fittings indicated.

The term candle power applied to any lamp has obviously no meaning unless the direction of that candle power is specified. From the polar curve of any lamp it is possible to calculate the mean candle power of the upper or lower half of a sphere surrounding the lamp known as the mean upper or lower hemispherical candle power (M.h.c.p.), or the average candle power all round known as the mean spherical candle power (M.s.c.p.).

But illumination is most conveniently expressed in lumens per square foot, one lumen being the light source which is sufficient to illuminate one square foot to an intensity of one foot candle.

A light source averaging one candle-power in all directions would be capable of so illuminating the area of a sphere of 1 foot radius or 4π square feet area. It therefore emits to 12.57 lumens.

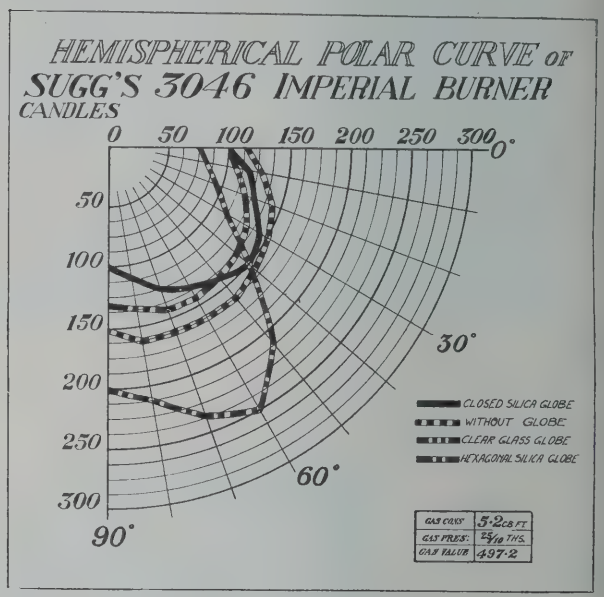


Fig. 21.—Polar Curves of Incandescent Gas Mantles, Bare and in Fittings

The usefulness of this conception of light flux will be seen later.

Direction is not only important with regard to the variations of candle-power in various directions shown by the polar curves of light sources.

Suppose the illumination to be provided be 3 foot candles on a horizontal plane at table height and that a light source were available 6 ft. above and 6 ft. away from the centre of the table.

Light would therefore fall on the table at an angle of 45°. If the polar curve of the source indicated a candle power of, say, 216 candles at 45°, the gross illumination would be 216 candles divided by the square of the slant distance, or $\frac{216}{(6\times\sqrt{2})^2}=3$ foot candles approximately. But the net or useful illumination must be reduced by the operation of Lambert's Law that illumination varies with the cosine of the angle of incidence. In this case the cosine of 45° is 1·414, so that the 3 foot candles becomes only $3\div1{\cdot}414$, or, say, 2·1 foot candles.

As against this a certain amount of light would be obtained from directions of emission other than 45° by reflection from the walls and ceiling of the room and depending upon the proportions of the room and the coefficients of reflection of those walls and ceiling.

Then, again, allowance must be made for depreciation in the lamp and accumulation of dust on shades and fitting.

It will be seen that even when considering one point only in the middle of only one table things have by this time become, to say the least, a little intricate, and the prospect of specifying the lighting units of even one room, even if we have the polar curves of all available lamp shades and fittings, is somewhat terrifying. But lighting engineers have reduced their work, at least for ordinary interiors, to reasonable limits; not by careless or approximate short cuts, but by standardising and tabulating the effect of all essential factors to obtain what is known as the "utilisation factor" of any given fitting—*i.e.*, the ratio between the number of lumens which a lamp is capable of emitting and the number of lumens which, when placed in that fitting, and under given conditions, it will afford to a given position.

For electric lighting units the tabulation of utilisation factors has been brought to a high pitch of perfection.

Tables are in existence giving the utilisation factors for all ordinary forms of lamps, reflectors and shades in connection with what are known as "room factors," which vary with the proportions of any interior and the mounting height of lamps above the plane of work, and the reflection coefficients of walls and ceilings.

In addition the mounting heights and spacings which will give satisfactory results as regards diversity of lighting for any given form of shade and reflector have been ascertained and exist in tabular form together with tabulated data as to the relative advantages of each form of fitting as regards efficiency for horizontal or vertical illumination, general appearance of a lighted interior, direct glare, reflected glare, shadows, and maintenance.

The task of the illuminating engineer is with this assistance, and as regards ordinary installations, quite simple.

The first task is to decide whether the situation demands that the light from the bare lamp shall be wholly reflected on to the work as with the ordinary enamelled iron reflector (direct lighting), whether some of it shall be allowed to escape upwards as with the ordinary opal glass shade (semi-direct lighting), whether it shall be wholly reflected upwards and be received by diffuse reflection from a white ceiling as with some forms of opaque reflector (totally indirect lighting), or whether it shall be mainly directed upwards for the same purpose by a reflector of opal glass or of some similar translucent material which allows part to escape downwards (semi-indirect lighting).

This being determined, the price and relative advantages of various types of fittings are studied with regard to the particular circumstances of the case.

In some instances economy in first cost must be sacrificed to secure low running costs or *vice versa*. In others appearance is all important, and in situations where cleaning is difficult, a low maintenance cost, *i.e.*, easy cleaning, may be the first consideration.

Characteristics which are in some cases essential become in others merely desirable.

The type of fitting being selected, a suitable mounting height is determined and from this a trial spacing is set out. If the resulting lay-out is unsatisfactory the mounting height, or even the type of fitting, is varied until a suitable spacing can be properly combined with its appropriate mounting height.

The total floor area divided by the number of lighting points multiplied by the required illumination in foot candles gives at once the net number of lumens required from each lighting point.

The room factor for an interior of given dimensions and mounting height is obtained direct from a table, and reference to a further table gives the utilisation factor appropriate to this particular type of fitting, room factor, and coefficient of reflection of walls and ceilings.

The lumens required divided by this utilisation factor gives the number of lumens required from the bare lamp. An appropriate percentage having been added for lamp depreciation and dirt accumulation, a size of lamp is selected which emits as nearly as possible the requisite number of lumens.

Lighting units in gas or other illuminants do not lend themselves quite so readily to standardisation, but the pressure of competition is enforcing the use of similar data.

Simple though this method is in principle, it leaves scope for considerable exercise of trained judgment and experience, and where the size or importance of an installation justifies such a course, the employment of an expert should constitute a profitable investment.

Flood Lighting.

The limits of my space, and doubtless of your patience, preclude any treatment of this new and in many ways beautiful method of lighting; which, like many of the latest developments of shop lighting and particularly of shop window lighting, is of no small interest to architects.

The automatic operating mechanism of flashing signs also is very ingenious, but—to the writer—the only point of interest about it is the ease with which it can be put out of order with an ordinary hatchet.

APPENDIX I.

Approximate coefficients of reflection from matt surfaces of different colours :—

	Per cent.
White	84
Greys	
Light pearl grey	73
Light grey	70
Silver grey	51
French grey	40
Battleship grey	20
Yellows.	
Ivory white	77
Primrose	70
Caen stone	68
Ivory tan	56
Greens.	
Light satin green	63
Light sage green	38 to 43
Olive	21
Forest	16
Dark	10 to 20
Blues.	
Light azure blue	52
Azure	39
Sky blue	36
Dark blue	10 to 20
Browns.	
Light buff	60
Buff stone	47
Tan	28
Cocoanut brown	16
Reds.	
Shell pink	51
Pink	50
Cardinal red	16

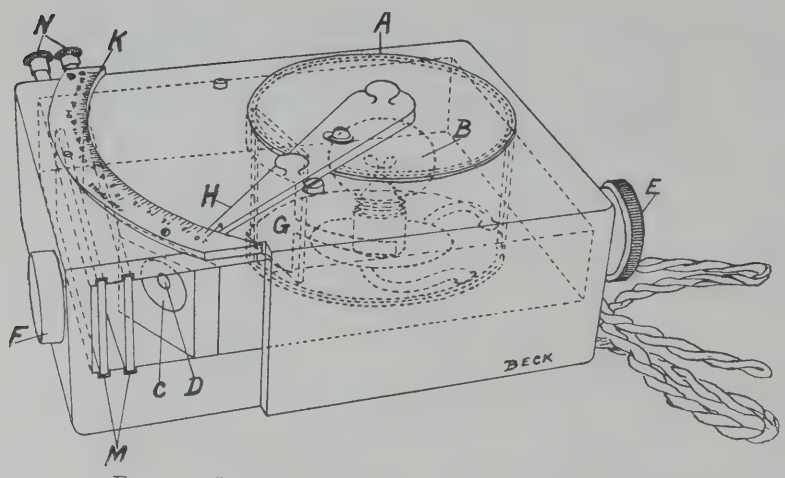


FIG. 22.—HOLOPHANE LUMETER PORTABLE PHOTOMETER

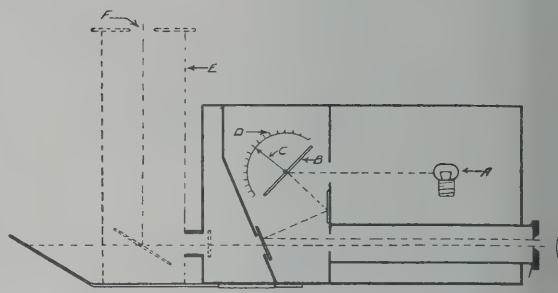


FIG. 23.—LUXOMETER PORTABLE PHOTOMETER

APPENDIX II.

PORTABLE ILLUMINATION PHOTOMETERS.

A very well-known form of portable illumination photometer is the Holophane Lumeter (Fig. 22). Inside a small box is a standard electric lamp B, the light of which is permitted to shine through an aperture with a movable shutter G on to a white disc C having a small hole D in the centre and fixed in a sighting tube E F. When it is desired to measure the brightness of any object such as a white card placed in any position or a patch of sky the sighting tube is directed towards the object and a small part of it is seen through the hole in the centre of the white disc. The lamp being switched on, the light falling upon the surrounding annulus of white disc is varied by moving the shutter until the disc and its central hole appear to be equally bright.

The spindle A which moves the shutter carries an indicating arm H across a scale K reading in foot candles. Equality between the brightness of the disc and the object seen through its central hole having been secured, the moving arm at once indicates on the scale the illumination in foot candles.

In order to measure brightnesses beyond the range of the scale, darkening screens M can be inserted in the sighting tube beyond the disc by the knobs N. One of these absorbs 9/10ths of the light reflected from the object, so that a scale ranging from, say, 0.01 to 2 foot candles, reads, when this 10 per cent. screen is inserted, as indicating 0.1 to 20 foot candles. The second screen absorbs 99/100ths, and when it is in position the same scale would read 1.0 to 200 foot candles. When both screens are in together the same scale readings would indicate 10 to 2,000 foot candles. For measurements of daylight a cap containing an orange-coloured diaphragm is fitted to the end F of the sighting tube to equalise the difference in colour between daylight and the light from the standard lamp. For ratio readings, which are all comparative, the alteration thereby made to the calibration of the scale makes no difference.

A very similar instrument is the Luxometer photometer (Fig. 23), made by Messrs. Everett Edgecumbe, the only material difference being that the light on the comparison disc from a standard lamp A is varied by altering the angle of incidence by means of a movable mirror B carrying an index arm C reading on a scale of foot candles D. This principle of varying the standard light is adopted from the Trotter instrument—the parent of most modern illumination photometers.

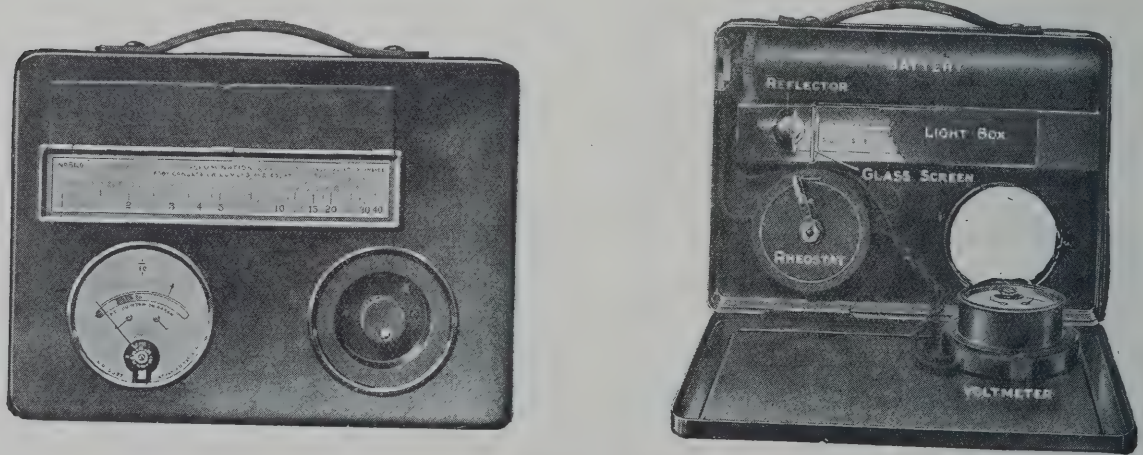


FIG. 24.—FOOT-CANDLE METER. ½ PORTABLE PHOTOMETER

In the Trotter a large slotted comparison disc is fixed to the top of the case, the slots receiving a variable illumination from inside. It is with this instrument that the author was first able to measure daylight intensities some 20 years ago and to establish the truth of the " ratio " system of measuring daylight which was devised independently by Mr. A. P. Trotter in South Africa and by himself in London. Daylight from sky is measured in the Luxometer through a removable vertical tube E at the top of which is a variable aperture E which admits only a small and measured portion of the light from the whole sky. This is the original method devised by the author for the Trotter instrument.

A very handy little instrument is the Foot-Candle Meter

APPENDIX III.
SUNLIGHT.

(Reproduced from the Transactions of the Surveyors' Institution by kind permission of the Council.)

The determination of the number of hours of sunlight which will on fine days enter a room through a given aperture is a more simple problem than that of the daylight illumination which can be obtained through the same aperture. The simple case may be taken of a window on a vertical wall lighting a room, the horizon being partly obstructed by buildings. The point in the aperture through which light can enter over a maximum number of oblique directions, horizontal and vertical, is first obtained by finding the intersection of planes

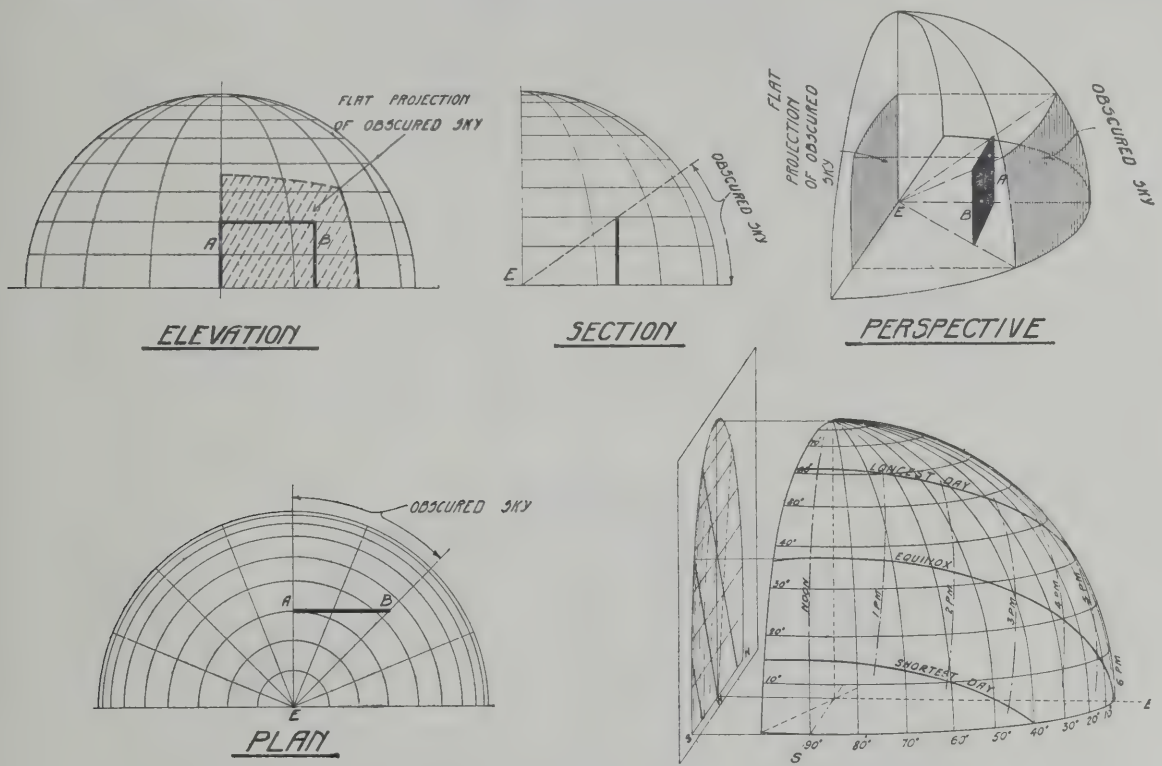


FIG. 25.—PRINCIPLES OF SKY PROJECTION FOR SOLAR DIAGRAMS

(Fig. 24), which can be obtained from the British Thomson-Houston Co. In principle this is merely a tube with a small lamp at one end and a series of holes along one side.

As the illumination of any part of a white strip inside the tube and seen through the holes varies with the distance from the light the apparent brightness of the various holes will vary from one end to the other. They can be placed at suitable intervals to give a scale of brightness as foot candles, and so marked. The uniform brightness of an external surface round the holes similarly coloured can readily be measured by observing which of the differently illuminated holes is neither lighter nor darker than the surface which surrounds it.

The normal range of the scale of foot candles is from 1·2 to 50 foot candles; but by means of a rheostat this can be varied as desired to a bottom limit of 0·012 to 0.5, and to an upper limit of 2·4 to 100 foot candles, i.e., the scale as marked can be divided by 10 or 100 or multiplied by 2.

touching the inner and outer reveals. It is assumed, as in Fig. 25, that the sky opposite the window is a quartersphere, of which this point is the centre. Any rectangular obstruction will block out from the view of a window an area of sky of which the flat projection necessarily appears to be distorted. A flat projection of this quartersphere of sky is described, of any convenient radius, say 10 in., and divided up into convenient angular divisions by lines of celestial latitude and longitude (Fig. 26). Upon this flat projection are projected planes generating at the centre point and touching the reveals and head of the window, giving the total sky visible from that point in the window aperture which can receive light from the maximum number of directions. Similar planes touching the edges of obstructing buildings are also projected, so that the area left between such projected planes and those of the window opening represents the total visible sky. All that is then necessary is to trace across such visible sky the apparent

paths of the sun at different periods of the year, such as mid-summer, midwinter, and the equinoxes; or, say, the 15th of each month, and to mark on these solar paths the points which the sun apparently passes at different hours of the day. The solar diagram, of which Fig. 30 is an example, shows at once the daily periods over which the sun can shine into the room through the aperture under consideration, and the prolongation of the sun paths across the obstructions, existing or proposed, shows similarly the loss of possible sunshine.

Viewed in a due east or due west direction, these circular paths are seen on edge, and in consequence their projections become straight lines, giving the diagram shown in Fig. 27, which shows a due west aspect with south (noon) on the left and north on the right.

In setting out a diagram a tracing of the flat projection (Fig. 27) is used. If this be employed for an east or west diagram, it will be obvious that the noon altitudes, being south and therefore on the edge of the diagram, can be marked

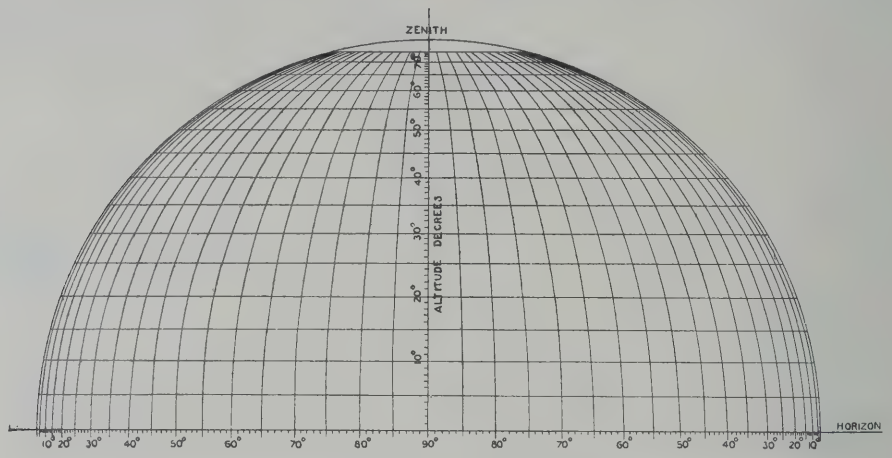


FIG. 26.—FLAT PROJECTION OF QUARTER SPHERE OF SKY

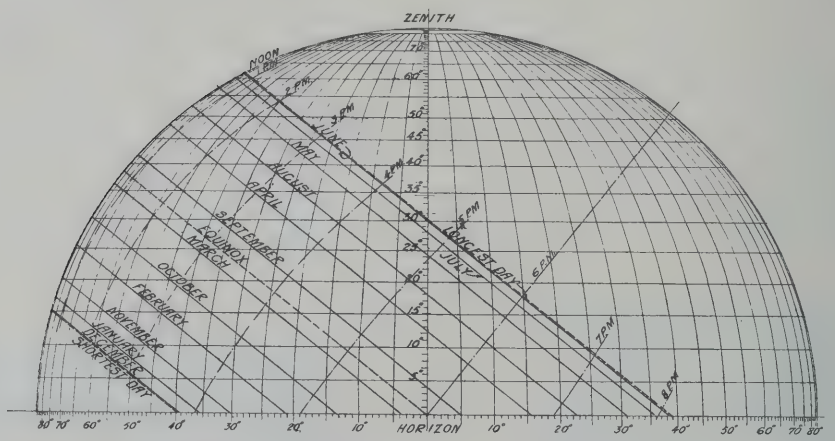


FIG. 27.—APPARENT SOLAR PATHS. ASPECT WEST

The following method of describing solar paths was adopted from that described in Molesworth's "Obstruction to Light," and will be found to be quite simple.

If the heavens be considered as a great sphere, the apparent diurnal path of the sun across that sphere will always be a circle inclined to the horizon, which circle the sun traverses once in 24 hours, or at the rate of 15° per hour. In the sun diagram, the sphere, with the sun paths traced on it, is supposed to be projected on to a flat plane, as in Fig 26, and the direction in which the sun paths are seen is determined by the aspect of the diagram; since these paths are circular, their projections will always be either straight lines or portions of ellipses.

on the circumference in degrees above the horizon. At noon at the equinoxes the sun is at a height above the horizon equal to the co-latitude (90°—latitude), and at 6 p.m. it is at the horizon due west, at the centre of the diagram. A straight line joining these points gives the apparent equinoctial afternoon sun path. The noon altitude for any other day in the year can be found by adding to the equinoctial noon altitude the "declination north" given in Whitaker or the Nautical Almanac for each day in the summer from March to September, and by deducting the "declination south" similarly given for each day in the winter from September to March. From these noon altitudes the apparent sun paths at dates other than

the equinoxes, viewed in a due east or due west aspect, may be described by drawing straight lines parallel to the equinoctial line from noon to sunset.

Since the sun traverses the equinoctial sun path at a uniform rate of 15° per hour, this path can readily be divided into hours and, if necessary, minutes, reckoning 15° per hour or four minutes of time to 1°. The equinoctial path is, like the base line of the diagram, a great circle of the sphere, and the paths for other times of the year are exactly similar to the parallel lines of celestial " latitude " drawn horizontally across the diagrams. By the construction of the diagram these lines are already divided into angular divisions by the curved lines of celestial " longitude," so that any required divisions of time can readily be transferred to the sun paths for any period of the year in an east or west aspect by means of a tracing of the lower 22½° of the projected hemisphere, and of the similar 22½° below the horizon (Fig. 26).

A due east or west diagram being now complete, a similar diagram for any other aspect can readily be obtained from it simply by shifting any number of convenient points on the straight line paths to the right or left by the number of degrees between the aspect required and due east or west. For instance, a south-west aspect is 45° to the left of a due west aspect and 135° to the right of a due east aspect (Fig. 28). A south aspect is 90° to the right or left, and upon such a diagram (Fig. 29) it will be seen that the points on the equinoctial sun path shifted 90° across the diagram result in a complete semi-ellipse.

For drawing the elliptical paths of other aspects and times by joining up transferred points, large French or ship curves will be found to be more convenient than railway curves. Fig. 30 shows the application of these methods to an actual case.

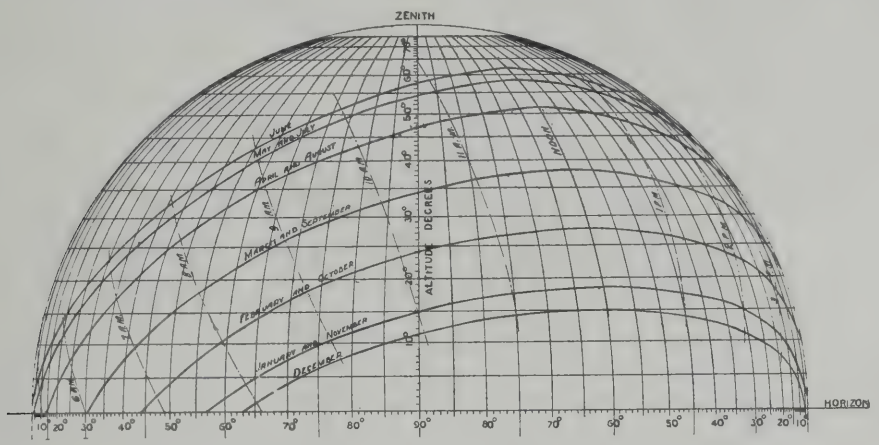


FIG. 28.—APPARENT SOLAR PATHS. ASPECT SOUTH 30° EAST

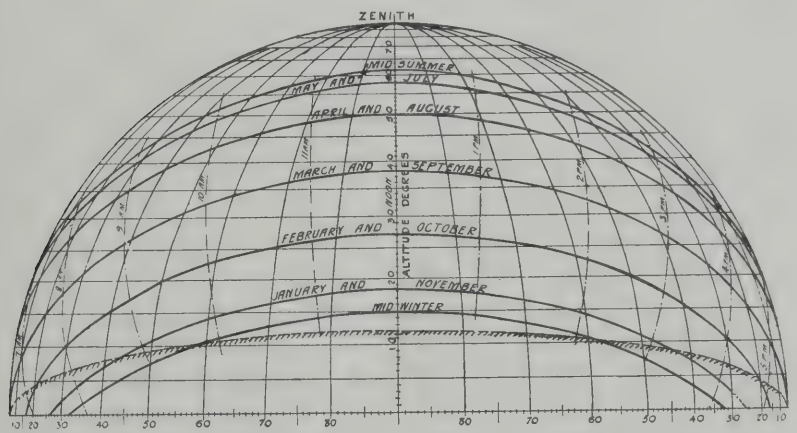


FIG. 29.—APPARENT SOLAR PATHS. ASPECT SOUTH

Solar path diagrams will be found to reveal quite a number of unexpected points. They show, for instance, how very much lower the sun is as compared with what it appears to be. A winter elevation which only reaches 15°, and a summer elevation which only climbs up to its maximum of 62½° at noon on midsummer day are both much lower than would be estimated by most people. The amount of possible sun from a north-eastern, or north-western, or even a northern aspect, is somewhat surprising. Sun diagrams also show that a due south aspect is not necessarily the most sunny with obstructions in front, especially in a long street of moderately high houses. Above an obstruction of 45° directly opposite

to a window only mid-day summer sun can enter, but in all oblique directions an obstruction of the same height subtends an increasingly smaller angle, as its distance increases with the obliquity. An obstruction which would subtend 45° directly in front of a window subtends only 36° in directions inclined to 45° to the right or left, whilst at an obliquity of 60° it drops down to 30°. Obviously, therefore, more sun will be enjoyed over an obstruction if the aspect be south-west or south-east, in which the position of the mid-day sun will reach its maximum elevation further along the street, where it will coincide with the more distant and therefore less severe obstruction.

The method of constructing the diagram from the point which is most favourably situated to receive very oblique rays credits the window with ability to pass rays which can only enter a very short distance into the room. In view of the very great gain in cheerfulness which all parts of a room enjoy when even a very oblique ray of sunshine enters the window, this is perhaps not altogether unreasonable. But if it were desired to ascertain the hours of possible sunshine which would reach any particular point inside the room, such as a hospital bed, or, in the tropics, an instrument or piece of machinery upon which the sun cannot be allowed to shine for more than a short period every day, then a diagram for that particular point must of course be described.

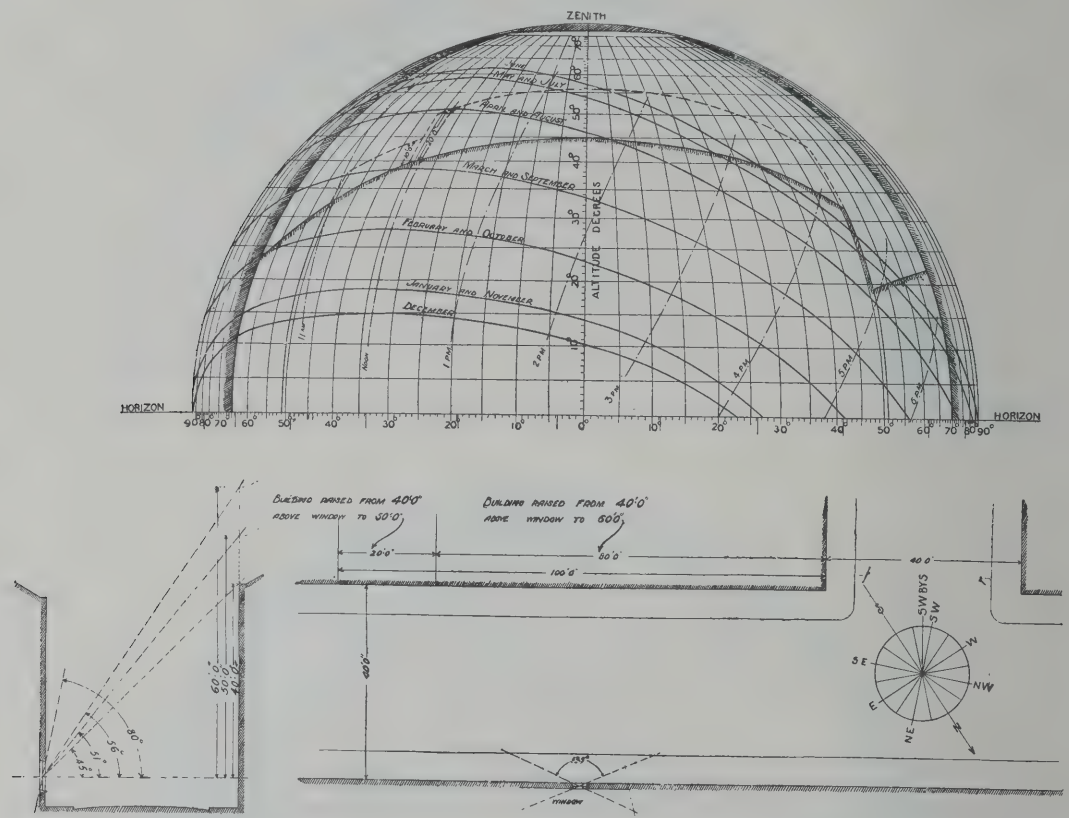


FIG. 30.—EXAMPLE OF USE OF SOLAR DIAGRAM TO ASCERTAIN LOSS OF SUNLIGHT DUE TO OBSTRUCTION

(The Discussion on Mr. Waldram's Paper will be published in the next issue of the Journal on 23 May.)

Exhibition of Mural Paintings

BY P. TUDOR-HART

The Exhibition of Mural Paintings, now being held at the R.I.B.A. Galleries, is an event of more than passing importance, connoting the reintroduction of the former collaboration of the architect, the mural painter and the craftsman decorator, which produced in the past such excellent and beautiful results.

In earlier times buildings comprised not only the structure of the outer shell, but also the interior decoration harmonising with the general architectural scheme, and it was in the interior that the magnificence of its beauty reached its culminating point. The first constituted the element without which the second could not find scope for its complete development; the second afforded the opportunity for the first to achieve its full significance. Without the loyal co-operation of these two factors architectural completeness cannot be said to have been attained, as witness many of our modern public buildings, which show a most lamentable dearth of interior decoration in the true acceptation of the term. The pitiful attempts to achieve a similar result are remarkable only for their inappropriateness and merely serve to demonstrate the loss that has been suffered by the cessation of collaboration.

On entering the R.I.B.A. Galleries this loss is at once borne in on the observant spectator. The ceiling of the Meeting Room cries aloud in its nudity for the exercise of the decorative painter's art, and the drab covering of the walls serves rather to accentuate than to hide their incompleteness. The mural designs temporarily displayed on the walls make plainer this most glaring deficiency, asking as they do for a home amid appropriate architectural surroundings, without which their entire artistic conception and emotional purpose fail to find expression. For it is abundantly clear that just as an interior requires the art of the decorator to complete the architect's design, so is it equally obvious that the design of the mural painter is completely lost without its architectural setting.

It is therefore greatly to the credit of those responsible for the hanging that, notwithstanding this unavoidable drawback—further complicated by the inclusion of photographs of mural paintings in their true setting, and of others deformed out of all proportion owing to the angle at which the camera has had to be placed, also of cartoon working drawings as well as complete full-scale paintings—there has been successfully achieved not only a clear and comprehensive exposition of the work but, in addition, a general homogeneous ensemble.

Before discussing the actual merits of some of the designs it might be useful to draw attention to those principles which should properly underlie all mural painting. First.—The planes of all painted surfaces should be sedulously preserved and the decorative design of every wall space ought to be complementary, and never antagonistic, to their geometrical shape. It is only where the architect has himself been at fault in introducing a structural shape inconsistent with or contradictory to the general architectural scheme of the room, that the mural painter may legitimately depart from this rule, and then only in so far as he is able to achieve by this departure a more harmonious ensemble. Second.—Tone and colour values or plastic relief can only be used by the painter as a means of suggesting the third dimension without attempting to create an optical illusion, and they should be judiciously restricted to the architectural features of the whole room or that part of the room which in itself constitutes a complete architectural feature. Third.—All attempt at enforcing a personal predilection in derogation of the architectural surroundings should obviously be avoided by the mural decorator, as it can only result in the painter's defeating his own object as well as that of the architect. The subject matter for pictorial representation is unimportant from the decorative point of view, always provided that its emotional qualities of colour tone and lineal design are consistent with the purpose of the architectural structure. It is obvious that a variety stage subject would scarcely be appropriate in a building destined for devotional purposes.

How hard it is to comply with these principles under the unsatisfactory conditions now existing is demonstrated by the fact that the work of even so experienced a painter as George Clausen is not always above reproach, exemplifying how important it is that the mural painter should have ample opportunity afforded him to practise his art under the freer conditions of unrestricted access to the wall itself and intimate collaboration with the architect and the craftsman.

George Clausen's four working cartoons, apart from their own merits, are interesting to see in comparison with the finished design, photographs of which are shown—unfortunately without their architectural surroundings. One of these—for the design entitled "Morning"—is remarkable for its homogeneity of design, in the distribution of the tone values and the accents derived from the contours of the figures in combination with the tones, markedly in the flesh tones of the man's figure, his right leg and foot combining with the flesh tones of the head and bust of the woman and head, arms and legs of the child, forming a rhythmic design of advancing value masses that encircle the receding mass of the woman's skirt. On the finished design, however, this order of things is partly reversed, the flesh tones of the child's figure combining with the mass of its dress and ceasing to form part of the rhythmic design displayed in the cartoon. The dark skirt of the woman's figure becomes an important accent instead of the effaced mass it presents in the cartoon. Again, the two figures in the design entitled "The Golden Age" gain when they are cut away from their surroundings and are inclosed in a rectangular frame, as shown in the detailed photograph. Amputation does not improve a well-conceived design.

These designs, decorative in themselves, tend to deform the geometrical shape and proportions of the spaces they were intended to decorate, and by filling in the corners and laying too much stress on the bottom of the tympanum they produce the effect of flattening

out the arch and accentuating the emptiness of its central focus. Yet, despite these defects, it is evident that the whole design serves its purpose, enhancing the decorative effect of the walls.

F. E. Jackson's large design for a tympanum shows, on the other hand, a decorative conception consistent with the geometrical shape of the wall surface, but admitting of application to no differently-shaped surface without destroying its decorative effect and impairing its emotional merit. The pyramidal mass of the two figures of France and Belgium fill in the centre of the wall space, accentuating its natural focus and affirming its dimensions and shape of contour. The small masses emphasise the rectangular shape of the base without deforming the arch, while at the same time the emotional presentation of the subject is well maintained. Unfortunately, his colour values, instead of confirming, destroy the relationship of mass and tone. The sharp contrast between the saturated red robe of France, enhanced by the blue spots of the mantle, and the dark neutralised green (low-toned yellow—to give it the correct colour designation) robe of Belgium, disconnect the two figures by inverting their planes and destroying to some extent the strength and vigour of the whole design. Much of the charm of brilliant colour in the left-hand corner of the picture, which would otherwise tell, is thus destroyed.

Mrs. Sargant Florence's four cartoons are remarkable examples of working drawings with careful observance of their mass relationship. Three simple tones are used to suggest the balance of the pattern of the design. The red chalk, the yellow tracing paper and the background tone of the paper cause the design to stand out in clear, well-defined masses of decorative effect. They suggest a businesslike clearness of mass designing that precludes any possibility of surprise during the course of the work. For the sake of comparison it is a pity the photographs of the finished work are not shown.

Miss Ethel Walker's cartoon, by virtue of its delicacy and elegance of form, and the balance of its tone values as well as the harmony of subdued colour, is one of the most decorative achievements in the exhibition. The artist's native sense of tone and colour values is marred by an obvious lack of technical knowledge.

S. I. Hichens's large decoration for a reredos is an example of a design created to fit a space and preserve its geometrical shape, and the drawing showing the design in its setting demonstrates the advantage of correct surroundings. Its decorative qualities depend in great measure upon the use of formalism in the design, in which he displays both imagination and individuality. The artist's knowledge of colour value is at fault, however, for he loses much of the emotional beauty of the blues and violets by the abuse of yellow and yellow green (broken yellow-orange). Not only have these colours been too extensively used, but they have been employed to depict both vertical and horizontal shapes, giving to the whole design a peevish effect, inconsistent with the peaceful lineal conception.

R. Hallward shows several interesting designs for church decoration. One, that suggests in its colour scheme and pattern a design more suitable for a dwelling house than a church, is particularly pleasant in its colour arrangement.

Mrs. Sargant Florence's sketches for frescoes executed at Bourneville School demonstrate that fresco painting can be treated by an artist in a decorative sense quite modern yet full of life and human interest.

And Miss Mary MacDowall, in her frescoes at the same school, shown by a series of photographs, treats her subject, episodes in the life of Christ, with naïveté and obvious sincerity.

Photographs of the frieze designed and executed by Miss Lanchester, Miss Lawrence and Mrs. Meeson Coates in tempera and water wax, also a photograph of true fresco executed by the students of Mr. Batten's class are interesting as showing examples of work actually carried out upon the wall.

It is regrettable that J. D. Batten's fresco paintings are represented only by photographs, as it would have been interesting to have seen the technical quality of the true fresco painting from the hand of one of its best exponents.

However, F. E. Jackson's "Eve," with its excellent decorative qualities, affords an opportunity of judging the peculiar charm and surface texture of this medium and reveals its unrivalled suitability for mural painting.

Miss Lanchester has some interesting examples of Le Bèque (water wax) medium.

On the subject of the craft there remains little for me to say, Mr. J. D. Batten having ably dealt with it in his paper read before the R.I.B.A.* I agree with Mr. Batten that true fresco, provided it be well prepared and laid, is quite as suitable to resist our climate as that of Italy. If anything the advantage would lie with us, always assuming that the lime sweating has, as it should in good craftsmanship, completely encased the painter's pigment. The power of fresco painting to withstand the foul air of cities is, I am persuaded, more than doubtful.

The matte surface of fresco, which allows the painting to be viewed from any angle without sheen, in addition to its peculiar beauty of tone and colour, makes it an unrivalled medium for mural painting in all cases where great richness and saturation of colour are not required.

Encaustic painting, either applied directly as a medium mixed with the pigment, or as a protective coating overlying true fresco, is also a sound and durable medium for mural decoration. Where strong, rich colour and tone are required it has the advantage of lustre with little sheen.

Size and oil emulsion paint is also a good medium for painting directly on walls, but its duration depends upon the plasterer's skill in preparing and laying the ground.

Oil painting on canvas marouflaged is the least worthy of recommendation for mural decoration. First, because oil paint will not resist the corrosive action of long exposure to the air without a thin protective coating of oil, which produces a reflective surface with all its disadvantages. Secondly, it cannot be marouflaged without danger to the paint before the latter is thoroughly dry, a matter of three to ten years according to the thickness of the paint. If there be the least trace of moisture in the wall either at the moment of, or subsequent to, the marouflaging the ruin of the paint is more certain than in the case of fresco. Lastly, darkening of oil paint will take place unless occasionally exposed to direct sunlight.

* It is hoped to publish Mr. Batten's Paper in an early edition of the Journal.

TRIBUTE TO SIR ASTON WEBB, PAST PRESIDENT R.A.

The Duke of York's Speech at the Royal Academy Banquet.

At the annual banquet of the Royal Academy of Arts, held at Burlington House on 2 May, the Duke of York, who was the principal guest, specially referred to the presidency of Sir Aston Webb and to his position as an architect. The Duke said in the course of his speech, replying to the loyal toasts, "To most of us, the event of peculiar importance in the world of art during the past year was the retirement of your late president and the appointment of his successor, whom we are so glad to see in the presidential chair to-night. Unquestionably Sir Aston Webb was the recipient of a noteworthy tribute when the Royal Academy departed from its time-honoured custom by choosing an architect as its president. I understand that, since the days of Sir Joshua Reynolds, the almost invariable rule has been that the distinguished office of President of the Royal Academy shall be filled by a painter. Sir Aston Webb's election broke a long-standing tradition, and it was hailed both as an honour to architecture and as a well-deserved recognition of one of its most distinguished exponents. A native of London, whose chief works are to be found within her boundary, our city claims Sir Aston Webb in a very intimate sense. She gave to him in the restoration of St. Bartholomew's, Smithfield, one of his earliest commissions, and he has richly contributed to her adornment in buildings recognised all over the world as architectural achievements of the very highest order. Perhaps the best known of these, by reason of its situation, boldness of conception, and dignity of treatment, is the Admiralty Arch, which will stand as a monument to your late president as long as London remains. Sir Aston's work, too, on the Tate Gallery Board, St. Paul's Cathedral Committee, and the Royal Fine Art Commission, to mention a few of his many activities, shows that his knowledge of affairs is of value second only to his skill in architecture, and for his work in these directions London in particular and the nation in general will ever be grateful. I feel I shall be giving expression to a sentiment common to us all in expressing the hope that Sir Aston Webb will soon enjoy complete recovery from his most distressing accident of last May."

Reviews

LONDON. *Her Traffic—Her Improvement and Charing Cross Bridge. By Captain George S. C. Swinton. London : John Murray. Price* 1*s. net.*

Captain Swinton has been well advised to publish his ideas on London and its problems. No one has meditated more faithfully on the defects of our metropolis, and it is worth while to have set these down and thus to offer hints as to the needful ameliorations, even where a definite conclusion is deemed beyond reach.

This is the line the author has taken. With perhaps an undue diffidence as regards his technical equipment for his task he reviews alternative proposals, often reserving his own views. Where he gives these they are of sufficient interest to make the reader desire that he had allowed himself more latitude in this direction.

In Chapter I, after glancing at the relative values of omnibuses and tramway services, Captain Swinton points out the difficulties that have arisen through our main roads being converted into shopping streets, and suggests that efforts should be made to find and develop alternative routes.

He next reviews the road junctions and crossings, which, at the present time, are responsible for our more acute traffic problems, and recites various solutions that have been offered in special cases, including bridges, tunnels, and the circulatory system, though as regards the latter the argument needs further expansion to make the advantages and disadvantages clear, as the volume of traffic in London makes demands that cannot be thus met in even the largest of our open spaces, and any line of circulation to be efficient must be more of the nature of a one-way route extending around several blocks of buildings.

Underground provision for parking vehicles and further underground footways secure mention. The revision of our urban railway lines is brought into the account, and the desirable extensions of these eastward and cross-river communications are also envisaged. Provision for flying services is given a passing note and Chapter I closes with a criticism of the constitution of the Traffic Authority and a suggestion that a "Traffic Brain" would be more to the point. Let us hope that the one may lead to the other, as it is obvious that a representative body could not take the place of a technical one, in devising sound remedies on imaginative lines.

Chapter II, after a brief reference to the past, goes on to review our failures at the present time in visualising the needs of London in the immediate future and a number of suggestions are made, most of which deserve serious consideration. In many cases the cost would be comparatively trifling, and in others the proposals look as if they could be justified on the gournds of amenity and convenience.

Pedestrian traffic, street architecture, the activities of the advertiser and London's ever-present problem of smoke, fog and dirt are glanced at in turn, and many aspects are summarised in the paragraphs dealing with a possible London really worthy of its importance.

Chapter III deals specifically with the question of Charing Cross Bridge. Here Captain Swinton has a definite suggestion to make, viz., that a new bridge should be constructed with two decks carrying an electrified railway on the lower and the road on the upper one, the road forking on either side of a reconstructed station, the western branch leading into the Strand and the eastern one bridged over this street and debouching into Charing Cross Road at the Cavell monument.

This scheme would provide a route for north and south traffic independent of the Strand and Embankment, while

the bridge, though too high for the best effect, would be several feet lower than the existing one. At the same time it has serious defects. It may be doubted if any scheme delivering another stream of traffic into Trafalgar Square can be accepted, and this one is not happy in emerging into the Strand close to the Grand Hotel, at a very congested corner. Again, the Strand bridge at Villiers Street would detract from the appearance of this thoroughfare; moreover the plan hardly suggests a satisfactory solution from the architectural standpoint, and, lastly, the high level of the road would make the approaches on the Surrey side difficult to plan and costly to execute.

These criticisms are not intended to belittle the value of Captain Swinton's effort to solve this problem, which has the merit, shared by few of the plans hitherto put forward, of recognising that any bridge at Charing Cross must provide for its traffic independently of the Embankment and the Strand. Possibly there may be a better solution, and we cannot help thinking that when this undertaking appears likely to be realised sich a solution will be forthcoming. H. V. LANCHESTER [*F.*].

GARDEN CITY HOUSES. *Fourth Edition, Revised and Enlarged. The Architectural Press, 9, Queen Anne's Gate, Westminster, S.W.1. 7s. 6d. net.*

Undoubtedly the really interesting thing about this book is the Specification at the beginning of the book.

Since the war we have all seen so many hundreds and thousands of designs for small houses that one's brain reels in the least attempt to pick one's pet half-dozen. And this book alone contains enough designs to make one at least a little dizzy in the attempt to review the book.

You may put it down to my faint-heartedness on being confronted by these seried ranks of cottages if you like, but I really feel that in the Specification given at the beginning of the book, we are getting down to brass tacks. But, all the same, I have a serious criticism to make of it, and that is that it is not full enough.

I should like to see more examples given of different methods of treatment of similar kinds of work. This might well be done in the same concise and clear manner in which the Specification is given. The authors' notes under each trade heading are particularly useful. As it stands, a very excellent basis is given on which architects can easily build up a good specification for a house of almost any design.

The numerous designs for cottages and small houses are shown by photographs, elevations and scale plans. A particularly interesting feature of the book is in showing the photograph and drawn elevation in juxtaposition. With regard to this, the photograph is usually the least flattering.

The book consists of well over a hundred pages of plates in addition to the Specification. Nearly forty pages at the end of the book are given to working drawings and photographs of interior decoration.

E. FRAZER TOMLINS.

The Library

UNE CITÉ INDUSTRIELLE. Étude pour la construction des villes, par TONY GARNIER. ob. fo. Paris nd. £4 4s. [A Vincent, 4 Rue des Beaux-Arts, Paris.]

This is a volume of plates illustrating an imaginary city in the south-east of France. The motive force of industry in this city is derived from water-power, and in other respects ideal social conditions appear to have been assumed. The designs, which cover a wide range of subject, are especially worth examination, as they are a study in what may be described as *rectangular* architecture. Not a single gabled or hipped roof is shown, and both industrial and domestic buildings are flat-topped. Within this limitation the artist succeeds in inventing a considerable variety of architectural forms which undoubtedly have an urban quality, and should be of interest to every student of civic design. A. T. E.

AMURATH TO AMURATH. By GERTRUDE LOWTHIAN BELL. 2nd edition. 8vo. Lond. 1924. £1 1s. [Macmillan and Co.]

This is a second edition of this charming book, the first having been published in 1911, and records a journey along the Euphrates valley.

In addition to numerous plans and photographs of the ruins left by successive civilisations in the region there are many shrewd and amusing comments on the habits and politics of the people. C. E. S.

ADOLFO VENTURI. Storia dell'arte italiana. VIII. L'Architettura del quattrocento, parte 1. la 8° Milano, 1923. £1 8s. [Ulrico Hoepli, Milano.]

This is the eighth volume of a remarkably complete work on all the arts of Italy, of which the first volume was published in 1901.

The work treats of the architecture of the Quattrocento, perhaps the most fascinating of all periods when mediæval freedom and daring were combined with classic detail and most exquisite sculpture. C. E. S.

NIEUW-NEDERLANDSCHE BOUWKUNST. By Professor J. G. WATTJES. 4to Amsterdam [1923]. 18s. [Amsterdam: Uitgevers-Maatschappij "Kosmos."]

This book may be regarded as supplementary to the paper on the same subject read at the Institute on 14 April by Dr. D. F. Slothouwer, and published in the JOURNAL on 10 May, and does not therefore call for detailed notice. It is well produced but not very well arranged; there is no index, the plans are all jumbled together at the end, and for many important buildings no plans are given.

Apart from the judicious use of plain surfaces in many of the designs, the chief interest is in the illusion of massiveness often obtained by the architects with what appears to be very flimsy construction.

It is reassuring to learn on the authority of Dr. Slothouwer that plans such as Nos. 136 and 137 are going out of fashion. C. E. S.

LES MONUMENTS MAURESQUES DU MAROC. By J. DE LA NÉZIÈRE. fo. Paris [1921]. £4 10s. (Paris: Editions Albert Lévy.]

This handsome portfolio, containing 100 heliogravure plates, of which several are in colour, illustrates very completely the Moorish buildings of Morocco. Hitherto these monuments and their decorative details have not received the same amount of attention that has been devoted to Muhammadan architecture in Spain, Egypt and India, and the Institute Library has done well to acquire this publication. There is an illustrated introduction, and fairly complete descriptions of the various plates. Marshal Lyautey contributes a preface. M. S. B.

Discussion on the Annual Report

(ANNUAL GENERAL MEETING, 4 MAY.)

THE PRESIDENT (MR. J. ALFRED GOTCH) IN THE CHAIR.

The PRESIDENT: I have now to present the Report f the Council and Standing Committees for the official ear 1924–1925, and to move its adoption by this Annual General Meeting.

The Chairmen or other representatives of all the Committees whose reports are appended to the Council's eport have been asked to attend this meeting so as to be n a position to answer any questions that may be asked n connection with these reports.

Mr. KEEN: I have to second the President's proposal or the adoption of the Report as printed.

The PRESIDENT: The Report is now open for liscussion.

Mr. Wm. WOODWARD [*F.*]: Mr. President and entlemen, I am happy to say that this is the thirtieth ccasion in succession that I have had the pleasure of pitomising the Annual Report of the Council. To-night he Report is rather more voluminous than at other imes. I was very pleased to hear that the Chairmen of he various Committees are here; but, so far as I personlly am concerned, there will be very little for them to nswer, because my criticisms to-night will be of a very nellow character, and I shall leave the younger men to itch into the Council, and not to deal with them in the vay that I adopt to-night.

I am very sorry to say that we have lost three past-residents during the year, 19 Fellows (including one Honorary Fellow), 26 Associates (including 3 Honorary Associates), and 19 Licentiates. With regard to membership, taking the years 1923 and 1925 (omitting 1924) here is an addition of 242 Fellows and an addition of 92 Licentiates.

Assessors and Arbitrators. The crumbs which have allen from the rich man's table are this year very numeous, and I may say, *en passant*, that the names of William Woodward and Charles Woodward are included n those crumbs.

Amongst the exhibitions in the galleries were the pen nd pencil and pastel sketches of Mr. T. Raffles Davison, nd those who know him will agree with me that when e has done us the honour of drawing perspectives of our uildings he has strengthened our weaknesses, and he has iven dignity and proportion to the design of busy archiects who obtained his assistance in the perspectives hich he so beautifully executed.

The Royal Fine Art Commission. I quote here: The Council have watched with interest and appreciaion the first year's work of the newly-constituted Royal ine Art Commission." Last year I had a good deal to ay about this Royal Fine Art Commission. To-night I ill say I regret I am not aware of any of this year's ork, so I presume this Commission has been 'doing ood by stealth and will ultimately blush to find it fame.'

London Building Acts Committee. I quote again: After more than a year of unremitting labour, the ondon Building Acts Committee completed a Report n April 1924." That has been submitted to the London ounty Council, with an invitation for an extended conference. I leave that for your contemplation. There does not appear to be any undue rush in this matter, which could have been, perhaps, of use to the profession.

The Architects' and Builders' Consultation Board. Delightfully academic. My own opinion is this—and I have expressed it in the public Press: no good whatever will arise to the building industry until the Trades Disputes Act of 1906 is repealed. Then there will be no more "ca' canny," and then shop-stewards, and the tyranny which accompanies them, will be eliminated. Until that day arrives, do not waste your time—I shall not waste mine—in patting on the back the Trade Union leaders, unless that Act is repealed.

Report of the Board of Architectural Education. That occupies 5¾ pages of the JOURNAL. There are 21 members of it, and they have had seven meetings. I shall refer hereafter to the number of attendances at meetings of these Committees. It may be through illness, or through circumstances over which they had no control that members did not attend, but I say that no man, however eminent, should consent to become a member of any of these Committees unless he has reasonable ground for believing he can attend the meetings. When I come to the attendances, you will probably agree with the observations I have made. I know that in several instances illness has prevented attendances. With regard to the Board of Architectural Education, one professor attended only one meeting; one architect attended only one meeting. But I will add that Professor Reilly attended every meeting, much to his credit. This Report appears to me to indicate an interesting mixture of good work and dilettantism.

Report of the Art Standing Committee. There are 21 members, and there were seven meetings. Six members never attended at all, one only attended once, and three only attended two meetings. With regard to this Committee, I see that Waterloo Bridge is mentioned, but they have not referred to St. Paul's Cathedral. I am sure that every one will agree with me that *The Times* newspaper is to be heartily congratulated on its magnificent efforts by which St. Paul's Dean and Chapter have obtained a quarter of a million of money. I have been trying, for three years past, to find out what is the matter with St. Paul's. I have visited it from top to bottom two or three times, and I have asked to be told where to put my hand on a particular part where there is a defect. I say this—and I challenge contradiction—that St. Paul's Cathedral to-day is as safe, structurally, as it was when Sir Christopher Wren left it—("Oh")—and I am sorry there should be so much dispute and difference of opinion amongst the experts. I am equally sorry that there should be so much dispute and difference of opinion between experts *re* Waterloo Bridge. What must the public think of the engineering and the architectural professions if they cannot agree amongst themselves as to what is the matter with those two important structures? It is not a credit to either profession.

Report of the Literature Standing Committee. That Committee held seven meetings, and there are 21 mem-

bers. One did not attend at all, three attended only once, but three attended every meeting. This is a very important Committee, because it includes the Library. I and others have mentioned the danger which threatens the finest architectural library in the world. I ask what have you done since last year? I know I ought not to anticipate the answer. During the last twelve months 210 volumes and 29 pamphlets have been added, and the attendances of readers in the Reference Library numbered 8,095. There is a very important addition to this Report, and I look upon it with great satisfaction, *viz.*: "The number of tickets issued for admission to the Library, other than to members of the Institute or to students or probationers, was 155." Why I am satisfied with that is, that there are some outsiders evidently deeply interested in architecture who come here and take advantage of this Library, and I am glad the opportunity has been afforded them to study architecture.

Report of the Practice Committee. It is not because I have been on the Practice Committee myself in years gone by that I say this, but I think I shall have the meeting with me when I remark that the Practice Standing Committee is the very best practical Committee sitting in connection with the Royal Institute. And let me tell you about the attendances. Nine meetings, and there are 21 members. Four members attended every meeting, including my son, Charles Woodward; four attended eight meetings, four attended seven meetings, three attended six meetings. You will agree that that is a magnificent record of attendances on this excellent Committee. It has done good practical work, and we should all be very pleased indeed if we could get some of the work of that Committee for the education of the young and of the old architect, not only transmitted to the Council, but published for the benefit of the profession at large.

Report of the Science Committee. I have no doubt there is a great deal in the acquisition of scientific knowledge, and a great deal in research. I ask the Chairman of this Committee what he has done, or what the Committee has done, to communicate with the Office of His Majesty's Works to resist the dreadful decay of stone which is going on in the finest Gothic building in this country, or in any other country, of its class, *viz.*, the Houses of Parliament. I understand that in the estimates for this year, a sum of £4,000 has been voted for the Office of Works to deal with this stone work. Why, you want £400,000 unless some steps are taken to resist this decay.

Report of the Competitions Committee. They have had eight meetings; three members attended every meeting, three attended seven meetings, but two did not attend at all. The other attendances were very poor. But some good work, no doubt, was done. This is one of the poorest-attended Committees.

I see the Committee refers, on page 381, to public buildings. One of the most important matters connected with the profession is this very question. A resolution was passed by a general meeting on 16 February 1925, and it was published in the JOURNAL of 21 February, and on page 272 you will find this: "That all public buildings paid for out of the rates or other public funds should be technically and architecturally worthy of the locality. To achieve this end, the design of such buildings should be either the subject of competition or entrusted to a qualified architect. And, further, that this resolution, if approved, be forwarded to the appropriate authorities." The resolution was passed *nem. con.*, and I ask that the proper person will tell me whether these words were complied with, *viz.*: "be forwarded to the appropriate authorities." Take for example only a few items of the proposed expenditure on public buildings by the Office of Works for this year, *viz.*: Ministry of Pensions, Hospital at Leeds, £132,000; British Museum, new storey to Library, £66,000; Geological Museum, new building, £225,000; National Physical Laboratory, new Physics building, £33,000.

Report of the Town Planning Committee. There are 28 members, 5 meetings. This seems to me to have been the very worst attended Committee of the whole lot. Twelve of its members did not attend at all; there are some ones, some twos, some threes. Only two attended every meeting. I do not think it would lead to a revolution if this Committee ceased to exist.

Report of the Hon. Auditors. This is a detailed report and deserves very careful reading. It shows a very satisfactory state of things, and it is pleasant to read that the surplus for 1924 was £1,239, particularly remembering the heavy expenses which the Institute incurred during that period. I think our best thanks are due for that Report, to Mr. Stephen Ayling and Mr. Hutchinson for their excellent work. The finances of the Institute are excellently dealt with by Major Harry Barnes, Chairman of the Finance Committee, and he also deserves our thanks for the detail he has gone into.

I reserve to the end a very important matter for the consideration of the Council, namely, the condition of the office of this Institute. To-day, the accommodation is hopelessly insufficient. When you enter the Institute, what do you find? Your entry is stopped by what we euphemistically call a "counter." You see several men—that is, you see them if they are not embedded among papers. It is badly lighted and badly ventilated, and the occupants are interrupted in their work by callers. I am sure you will agree that our offices are not worthy of the Royal Institute. I do not mind what expenditure within reason is incurred for their improvement. I sincerely hope we shall deal with this matter, and if the new offices are carried out as well as this room was, we shall all be satisfied.

And now I come to the staff, which now comprises 20 members in all. (Mr. Woodward enumerated the members and their years of service.)

I think you will believe me when I say I like to pay well all who work for me, because if you pay a man or a woman well, as a rule, they work well. Why is the number of the staff the same as last year? The first reason is that there is no accommodation; the second is that the members of the staff work hours and hours, night after night, overtime for which they are not paid. That ought not to be. Without going into detail, you will agree that additions to salaries should be in accordance with the position of the various members of the staff, and I shall be very disappointed if next year there is not an addition of £1,000, spread over the entire staff.

Last year, I referred to you, Sir. I said "My last few words are about our President. I am one of those who say that the proof of the pudding is in the eating. I am something of a gastronomist myself, and the half

f the pudding I have consumed has been very nutritious ıd easily digested. We have the other half of our resident's pudding to consume, and, judging by our ɛperience of the first half, we shall agree that the residential pudding has been a remarkabl y good and ıtisfying one, and when Mr. Gotch leaves the chair : the end of his term, he will do so with as much *éclat* ; that of his predecessors." Now, Mr. President, I enture to say this to the meeting, in your presence : 'e have all had considerable experience of our President, ıd we all thoroughly agree that Mr. Gotch will ;ave the Presidential chair not only with the sincere ɛgard, but with the deep affection of every member of ıis Institute. We all know the expenditure of time he ıust have given during his Presidency ; we know what involves, and you will agree with me that at very meeting he has, as his great predecessor Paul Vaterhouse did, always dealt with matters with that ıir-mindedness which should distinguish every President.

And I must not forget that Mr. Arthur Keen is leaving ıe post of Honorary Secretary, after serving six years in ıat office. The amount of time and attention he has evoted to that office not many of us know, and if his ıccessor carries on the work as well, we shall be only too rateful. I thank you for the kind attention you have iven me.

The PRESIDENT : Has any other member any bservations to make ?

Mr. R. STEPHEN AYLING [*F.*] : On behalf of my co-djutor and myself, may I thank Mr. Woodward for his ind remarks in thanking us for our duties as Honorary ıuditors ? The books are so excellently kept by Mr. aker and his staff, and also by our Chartered Account-nts, that our work as auditors is practically negligible.

The PRESIDENT : I will put the motion for the doption of the Report to the meeting.

Carried unanimously.

The PRESIDENT : The list of attendances at the ouncil and the Standing Committee meetings has been ıid on the table, and will be printed in the next issue of ıe JOURNAL, and also sent out to members with the oting papers.

I beg to move that a hearty vote of thanks be accorded ɔ Mr. R. Stephen Ayling [*F.*], and Mr. C. E. Hutchinson *A.*] for their services as Hon. Auditors for the past year

Carried by acclamation.

The PRESIDENT : Mr. A. H. Goslett [*F.*] and Mr. '. J. Toop [*A.*] are both eligible and willing to be ominated as Hon. Auditors for the current year, and ' it is your pleasure, I beg to move that these gentlemen e so nominated.

Carried.

Mr. HUTCHINSON : I would like to second the earty vote of thanks to Mr. Keen for his services as Ion. Secretary. We know the enormous amount of 'ork he has put in, and we are all deeply grateful to im for all the work he has done.

Carried by acclamation.

Mr. KEEN : Gentlemen, I accept your congratulations nd compliments with the greatest possible pleasure nd gratitude. I have done nothing for the Institute rhich it has not been a pleasure to me to do. And as ɛgards the future, I have not the smallest misgivings bout the office of Honorary Secretary, if I can forecast who is going to be the holder of that office during the next, and, I hope, for several years to come. If my office falls upon Mr. Stanley Hall, as I hope it will, I know you will be admirably served by your Honorary Secretary.

THE DEATH-WATCH BEETLE.

In 1922 there appeared in the JOURNAL an account of the measures taken to preserve the roof of Westminster Hall from further destruction by the wood-boring beetle. The account was illustrated by photographs of the death-watch beetle at its various stages of development (grub, chrysalis, beetle) and concluded with a description of the chemical solutions devised by Dr. H. Maxwell Lefroy for spraying the timbers, the method of applying the solutions and the names of the firms who supplied the apparatus and the solutions.

Further information on the death-watch beetle may be found in the leaflet just issued by the Society of Antiquaries, which can be obtained free on application to the Assistant Secretary of the Society.

In the preface Lord Crawford and Balcarres, President of the Society, emphasises the alarm that has been aroused in recent years by the ravages of the beetle, and states that the "Society of Antiquaries is anxious to offer advice to those who may desire fuller information than that contained in the circular."

Dr. H. Maxwell Lefroy, the writer of the pamphlet, is equally emphatic as to the damage done, for he says that it has been found that nearly all buildings in which oak has been used for roof timbers, flooring, screens, etc., are now, or have been, infested with the beetle which eats tunnels in the solid wood, gradually destroying it, and he mentions the case of an oak floor laid down as late as 1882 which has already so perished as to be useless.

Defective ventilation is a contributing cause, and wall-plates, purlins and the ends of rafters in walls should be examined.

The pamphlet is illustrated by photographs to scale of pieces of wood showing the holes made by the death-watch and furniture beetles. In surveying a roof or other oak structure these holes should be carefully examined ; if they are fresh and clean-cut recent and active attack may be expected to be in progress ; if all the holes have dirty edges and are of the same colour as the surface of the oak they are probably old and do not indicate present attack. Another and important point to look for is the excreta (pellets) of the grubs. If this is continually falling, or if fresh heaps are found below fresh holes, it may be anticipated that attack is in progress.

The method employed to kill the beetles or grubs consists of the application by means of a spraying machine of a liquid that thoroughly wets the timbers, penetrates any decayed part, enters any beetle holes, gives off a vapour that destroys the grubs inside and leaves behind an invisible, unalterable film of poison which kills emerging beetles or kills the grubs seeking to enter.

As to the time and expense involved Dr. Lefroy states that an ordinary church roof may be treated in a day, and unless structural alteration is required the total cost may not exceed £50.

The Society of Antiquaries desires to emphasise two points : first, that it is possible to ascertain if a building is attacked ; fresh emergence holes, fresh pellets are danger signals ; secondly, that treatment is not usually expensive, unless matters have gone so far as to necessitate structural repairs.

W. P. STEEL.

ALLIED SOCIETIES.

Mr. CLEMENT STRETTON, F.R.I.B.A., who has served the Leicester and Leicestershire Society of Architects as honorary secretary for the past fifteen years, has been succeeded in that office by Mr. C. F. McL. Keay, of 6 Millstone Lane, Leicester.

Labour Problems in the Building Industry

At an ordinary general meeting of the Architectural Association, held on Monday, 27 April, an address on " Labour Problems in the Building Industry " was delivered by Mr. R. Coppock, the general secretary of the National Federation of Building Trades Operatives. The chair was occupied by the President of the Association, Mr. H. S. Goodhart-Rendel.

Mr. Coppock referred to the conditions of the building industry prior to 1914, which were, he said, the worst conditions of any craft industry existent in Great Britain ; and when it was now said that the building operatives were taking the cream of the industry because their wages were equivalent to a rise of 125 to 130 per cent. above pre-war rates, it must be understood that their pre-war rates had not been equal to the cost of living.

To-day, according to some sections of the Press, the building trade operative was the only person who was responsible for the shortage of houses in Great Britain, and the bricklayer particularly. That was quite false. As far as the operatives were concerned, they were prepared to use the whole of their machinery if the Government was prepared to go on with a continuity programme that would provide the people with housing accommodation ; but they contended that the Weir house was the worst type of steel house that was on the British market to-day. It was not a steel house, it was a timber house. The inner lining was such that in a few years it would be entirely insanitary. The building operatives had no objection as an industry to any type of house being built. It mattered very little to them what class of house the local authorities bought for their people, provided always that the trade union conditions operated for the men who were employed to work upon these houses. With regard to hours of labour, he knew that in his office he could get better work by working his staff 38 rather than 48 hours a week. If people would only get away from the idea that the only method to make everything productive was to work a lot of hours it would be better for them. In the most progressive countries of the world they had a short working week. Here in this country he had heard architects and builders say they wanted to get back to the good old times. They did not mean it. They did not want to go back to the good old times, but they wanted the operatives to do so. He wanted to see a forward movement, and he believed that one of the defects in the building trade to-day was the attempt on all sides to extend the working week. It would be a disaster. It would upset the general relations of the industries.

He was a bricklayer, and in his best times his average wage was £1 7s. 6d. per week. It should be realised that the operatives' claim for a " wet " time was a real claim and one which had been long due for the men working in the industry. Architects would not think of stopping their assistants' pay because it was raining outside, and yet operatives had to stand down when the weather was wet or through shortage of material or because the wrong material had been sent or for some other reason. Surely the operatives had some claim for a " wet " time allowance. He hoped they would progress in the same way that other nations were progressing. In Holland to-day 70 per cent. of lost time was granted to workers in the building trade. In Germany things were so unstable that their national agreement had gone by the board, but it was part and parcel of their national programme that there should be payment for " wet " time. In Sweden, Norway and Denmark they paid 70 to 80 per cent. This was one of our biggest problems, but operatives in this country should be assured of some payment for " wet " times. On the question of apprentices, the operatives' association had endeavoured to come to an agreement with the builders of the country. They had insisted that the boys should have proper training and they had also insisted that they should have control over the boys' wages. They had agreed with their builder friends to train the boys and youths and adult men on housing schemes, to take labourers from the ranks and to put them through a course of training. The boy had a right to choose his trade, but too many had chosen to be joiners or plumbers or painters when there was a scarcity of plasterers or stonemasons, and therefore the operatives' society claimed the right to say that some of those boys should be bricklayers or plasterers so as to balance the industry. What they were suffering from at the present moment was the lack of balance of the crafts due entirely to the haphazard employment of apprentices.

Mr. Alan Slater proposed a vote of thanks to Mr. Coppock for his address. With regard to the question of " wet " times, he thought Mr. Coppock might assure himself that architects as a body were heartily with him. It was outrageously unfair that a man should go on a job and if it began to rain be told to knock off, so that he had to go away without any money in his pocket. It had been suggested that there should be a wages adjustment fund to meet such a thing as this, and one builder in London had adopted such a scheme with success. He hoped other builders would seriously consider the matter. Another point was the question of the possibility of the grading of trades. In certain of the most skilled trades grading had actually taken place with very good results, and it would be a good thing to give men an opportunity to rise in their own industry. On the question of apprentices it had been said that it was the trades unions who limited the number. There certainly had been a shortage of apprentices in certain cases. As to taking in men of 30 and 40 years of age, the architects did not favour that, but they did want men of 25 or 26 to be taken in after the war because there were many men of that age who came out of the Army who had had no opportunity of learning a trade and who wanted a chance of learning one. With regard to the problem of keeping contracts which had been agreed to between employers and employed, he understood it was agreed that when summer time came in the men were going to work 46½ hours per week, but they had not done so. That was one of the things that told against the operatives.

Mr. Manning Robertson seconded the vote of thanks.

The resolution was put to the meeting and carried unanimously.

Mr. G. Hicks, secretary of the National Federation of Building Trades Operatives, said with regard to " wet " times that there should be some sort of fund to meet a matter of this kind over which the workman had no control. He spoke as a bricklayer, and there was a great feeling amongst their members to-day that something should be done to meet the men's claim for lost time. They were only asking 50 per cent. for lost time, because they knew that if men got as much money for sitting down and doing nothing as they would if they were working, they would not work at all. The idea of losing 50 per cent. of their wages would be sufficient to get the workmen to go on with their job as soon as the weather would enable them to do so. Then again, millions of hours of labour were lost because there was bad organisation. What they wanted was a continuity of work, and he was sure that could be arranged with a little organisation. Every municipality in this country should be compelled to state its requirements in housing for the following year, and then some idea would be obtained as to the volume of building material that would be required. Suppose they fixed the number of houses at 200,000 a year. If the building requirements for commercial work, for schools, hospitals and other large buildings were large in the first year, the number of houses for the next year could be reduced to 150,000, and if the commercial and other requirements became less the number of houses for the third year could be increased to 250,000. That would give stability in the

ndustry and they could take people into the industry in ufficient volume to meet all requirements. But the position ow was one of great uncertainty. They wanted some sort of easonable guarantee. On the question of materials it was true nat the whole of the building materials were used up every veek. There was no surplus, and it was useless to talk of ringing more people into the industry until they brought in ufficient material for them to use. The operatives had the ight to demand a living wage. People had a right to live in ouses, but they had no right to ask operatives to build those ouses for 50s. a week. They had the right to ask for and were oing to ask for more and more control in the building industry. They were willing to allow 100,000 apprentices in their industry t once providing they had the material coming in.

Mr. J. Murrey (Secretary of the London District of he National Federation of Building Trades' Operatives) eferred to the necessity for the development of craftsmanship. He wondered how often it occurred to the critic of the building peratives that the latter were the last factors in the cost of the uilding. The first person who was responsible was the uilding owner. He very often did not know what he wanted ntil he saw the building go up and then he wanted alterations nade which did not conduce to the best spirit in the operative. Very often the builder had to stop his men because there were elays in supplies of material. If the best results were to be got rom a man he must be given the greatest facilities to get on with his work and he must not be restricted. He must have his uilding material. With regard to the necessity for apprentices t might be interesting for them to know that in his own trade, hat of a stonemason, in 1919–1920 there were only about 70 apprentices as against 1,800 operatives in the London district, and there was a rule in operation for one in seven to be employed. With one or two exceptions no employer had taken his quota of apprentices, and at the present moment they had hundreds of boys scheduled and waiting to come into the trade. Before the war an employer could recruit his labour from the provinces, but that channel was now stopped. He was certain that it would be some years before the master builders in London had got a sufficient quota of apprentices to meet the requirements of the industry. He was surprised to find employers opposing them in their claim that the boys should have technical training as a part of their apprenticeship. With the present-day need for skilled men that could hardly be credited.

Mr. Coppock replied to the vote of thanks. He said they contended that there should be a minimum rate of wages paid in all grades and they had never objected to a man paying more than that grade to any person who he thought was worth it. Regarding the question of apprenticeship, he agreed that the employers had never taken up to the limit. The difficulty of having apprentices was that the employers had never attempted to train them; the men on the job always did that. With regard to keeping contracts, the building operatives had done so as far as they could under the circumstances. Regarding the shortage of output, 20,000 bricklayers laid a considerably larger number of bricks last year than the same number did in 1914.

A.B.S. SCHEME OF PROFESSIONAL INSURANCE.

Insurance to-day is a very complicated business and too much care cannot be exercised in the choice of an insurance company and of a policy. If, however, architects consult the Insurance Committee of the Architects' Benevolent Society, they are sure of obtaining competent guidance in all insurance matters. Especially favourable terms are secured by the Society, and every insurance negotiated through its agency results in a direct contribution to the Benevolent Fund. Enquiries should be addressed to the Secretary, A.B.S., 9 Conduit Street, W

NOTES FROM THE MINUTES OF THE COUNCIL MEETING.

20 *April* 1925.

The Institution of Municipal and County Engineers.

In response to an invitation from the Institution of Municipal and County Engineers, the following gentlemen were appointed to represent the R.I.B.A. at a round table conference on Town Planning :—

Professor Patrick Abercrombie,
Major Harry Barnes,
Mr. L. H. Bucknell,
Mr. F. M. Elgood,
Mr. Percival M. Fraser,
Mr. Herbert Shepherd,
Mr. W. Harding Thompson.

The General Council for the National Registration of Plumbers.

Mr. Arthur J. Hope, President, Manchester Society of Architects, was appointed to represent the R.I.B.A. at a meeting of the General Council for the National Registration of Plumbers in Manchester on 18 June 1925.

The R.I.B.A. and the Society of Architects.

The Secretary reported that the numbers of members of the Society of Architects who had transferred to the R.I.B.A. to date under the amalgamation agreement were as follows :—

Fellows	205
Members	822
Licentiates	238
Students	84
Hon. Members ..	5
Retired Members ..	35

The Registration Bill.

The Registration Committee, having reported that the preparation of the Draft Registration Bill was nearing completion, were empowered to consult counsel on the matter.

Reinstatement.

Mr. W. Leonard Dowton was reinstated as a Licentiate.

Resignations.

The following resignations were accepted with regret :
William Davidson [*L.*].
W. W. Longbottom [*L.*]

FRANCO-BRITISH UNION OF ARCHITECTS.

Fifth General Meeting. Paris Preliminary Programme.

23 *May*.—Opening meeting at the Pavilion of the S.A.D.G. in the " Exposition des Arts Decoratifs." Visit to the Exhibition, and general meeting in the Pavilion.

24 *May*.—Excursion to the Abbaye de Chaalis Ermenonville and Chantilly.

25 *May*.—Visit to the Salon des Artistes Français, and reception at the Maison des Artistes. Evening : Banquet offered to the British delegates.

ATTENDANCES AT COUNCIL AND STANDING COMMITTEE MEETINGS, 1924-25.

Council (16 Meetings).

President : J. Alfred Gotch, 16. *Vice-Presidents :* Major Harry Barnes, 14 ; Herbert T. Buckland, 10 ; E. Guy Dawber, 14 ; Sir Edwin L. Lutyens, 2. *Past Presidents :* Sir Reginald Blomfield, 0 ; Paul Waterhouse (deceased), 0. *Hon. Secretary :* Arthur Keen, 16.

Members of Council : Professor S. D. Adshead, 4 ; Henry V. Ashley, 15 ; Sir John J. Burnet, 4 ; Walter Cave, 14 ; Major H. C. Corlette, 15 ; Sir Banister Fletcher, 11 ; Henry M. Fletcher, 14 ; W. Curtis Green, 9 ; Francis Jones, 9 ; John Keppie, 3 ; H. V. Lanchester, 4 ; E. C. P. Monson, 13 ; T. Taliesin Rees, 6 ; Edwin J. Sadgrove, 10 ; Sir Giles Gilbert Scott, 0 ; Sir A. Brumwell Thomas, 12 ; Percy E. Thomas, 10 ; Francis T. Verity, 9.

Associate Members of Council : Hope Bagenal, 7 ; H. Chalton Bradshaw, 14 ; Leonard H. Bucknell, 16 ; Professor Lionel B. Budden, 8 ; J. Alan Slater, 14 ; Michael Waterhouse, 9.

Representatives of Allied Societies : J. Stockdale Harrison (Leicester), 6 ; Arthur J. Hope (Manchester), 9 ; W. T. Jones (Northern), 5 ; E. Bertram Kirby (Liverpool), 11 ; G. C. Lawrence (Wessex), 13 ; George A. Paterson (Glasgow), 0 ; H. L. Paterson (Sheffield), 10 ; Edward P. Warren (Berks, Bucks and Oxon), 14 ; Robert M. Young (Ulster), 1.

Representative of the Architectural Association : H. S. Goodhart-Rendel, 9.

Standing Committees.

Art (7 meetings).—*Fellows :* Professor S. D. Adshead, 2 ; Sir John J. Burnet, 2 ; Walter Cave, 5 ; E. Guy Dawber, 2 ; H. Austen Hall, 0 ; H. V. Lanchester, 0 ; F. Winton Newman, 6 ; Halsey Ricardo, 4 ; Sir Giles Gilbert Scott, 0 ; Professor F. M. Simpson, 3. *Associates :* Leonard H. Bucknell, 6 ; Cyril A. Farey, 1 ; P. W. Lovell, 0 ; T. S. Tait, 0 ; W. Harding Thompson, 4 ; Michael Waterhouse, 0. *Appointed by Council :* Heaton Comyn, 6 ; H. P. Burke Downing, 6 ; Walter Tapper, 3 ; Francis T. Verity, 4 ; Maurice E. Webb, 3.

Literature (8 meetings).—*Fellows :* Louis Ambler, 7 ; W. H. Ansell, 3 ; Martin S. Briggs, 4 ; Major H. C. Corlette, 7 ; Henry M. Fletcher, 2 ; D. Theodore Fyfe, 3 ; E. Stanley Hall, 0 ; Charles S. Spooner, 4 ; Arthur Stratton, 3 ; C. Harrison Townsend, 4. *Associates :* H. Chalton Bradshaw, 5 ; C. Cowles-Voysey, 4 ; A. Trystan Edwards, 1 ; P. W. Hubbard, 4 ; J. Alan Slater, 8 ; Professor J. Hubert Worthington, 1. *Appointed by Council :* Professor Lionel B. Budden, 1 ; A. H. Moberly, 7 ; Basil Oliver,* 7 ; S. C. Ramsey, 3 ; C. E. Sayer, 6.

Practice (9 meetings).—*Fellows :* Henry V. Ashley, 9 ; F. Chatterton, 8 ; Max Clarke, 7 ; G. Hastwell Grayson, 5 ; Francis Jones, 4 ; Arthur Keen, 3 ; G. H. Lovegrove, 8 ; T. R. Milburn, 1 ; D. Barclay Niven, 8 ; W. Gillbee Scott, 2. *Associates :* Horace Cubitt, 7 ; G. Leonard Elkington, 6 ; H. V. Milnes Emerson, 6 ; J. Douglas Scott, 9 ; Herbert A. Welch, 7 ; Charles Woodward, 9. *Appointed by Council :* W. H. Atkin-Berry, 9 ; C. A. Daubney, 5 ; Delissa Joseph, 7 ; E. C. P. Monson 8 ; Harry Teather, 6.

Science (8 meetings).—*Fellows :* R. Stephen Ayling, 4 Herbert T. Buckland, 0 ; W. E. Vernon Crompton, 8 J. E. Dixon-Spain, 0 ; Alan E. Munby, 3 ; William A Pite, 5 ; H. D. Searles-Wood, 5 ; Professor R. Elsey Smith, 3 ; Digby L. Solomon, 4 ; Dr. Raymond Unwin 2. *Associates :* R. J. Angel, 3 ; Hope Bagenal, 6 P. W. Barnett, 5 ; H. W. Burrows, 2 ; T. F. Ford, 1 Harvey R. Sayer, 6. *Appointed by Council :* T. P Bennett, 4 ; J. Ernest Franck, 7 ; Francis Hooper, 4 J. H. Markham, 3 ; Edwin J. Sadgrove, 2.

* Mr. Oliver's name was inadvertently omitted from the Literature Committee's Report published in the last issue of the Journal.

THE ANNUAL ELECTIONS.

New Nominations to Council and Standing Committees.

The following nominations have been made by members in accordance with Bye-Law 36 :—

As Vice-President.—Downing : Henry Philip Burke [F.].

As Members of Council.—Joseph : Delissa [F.] ; Reilly : Professor Charles Herbert [F.] (Liverpool) ; Searles-Wood : Herbert Duncan [F.] ; Welch : Herbert Arthur [F.].

As Associate Members of Council.—Cart de Lafontaine : Lt.-Col. H. P. L. [A.] ; Heaven : Frank Henry [A.] (Cardiff) ; Howitt : Major Thomas Cecil [A.] (Nottingham).

As Licentiate Member of Council.—Reeves : Augustus Seymour [L.].

As Associate Members of the Practice Standing Committee.—Hamlyn : William Henry [A.] ; Jelley : Frederick Richard [A.] ; Sturgeon : John Henry [A.].

As Licentiate Members of the Practice Standing Committee.—Denington : Joseph William [L.] ; Reeves : Augustus Seymour [L.].

Notices

THE FOURTEENTH GENERAL MEETING.

The Fourteenth General Meeting (Ordinary) of the Session 1924-25 will be held on Monday, 18 May 1925, at 8 p.m., for the following purposes :

To read the Minutes of the Annual General Meeting held on 4 May 1925 ; formally to admit members attending for the first time since their transfer or election.

To read the following paper : "The Architectural Development of American Cities," by Mr. G. Topham Forrest (F.), architect to the London County Council.

VISIT TO HAM HOUSE, RICHMOND.

By the kind permission of the Earl of Dysart a visit to Ham House, Richmond, Surrey, has been arranged by the Art Standing Committee to take place on Saturday afternoon, 16 May. As the number of tickets to be issued for the visit must be limited, members who wish to take part are requested to apply as early as possible to the Secretary, R.I.B.A., 9, Conduit Street, London, W.1.

THE R.I.B.A. CHARTERS AND BYE-LAWS.

The attention of members is directed to the pamphlet, enclosed with this issue of the Journal, containing the Supplemental Charter of 1925 and the revised Bye-laws of the Royal Institute recently approved by the Privy Council.

NOTICES (continued)

THE R.I.B.A. ANNUAL CONFERENCE

NEWCASTLE AND DURHAM.

8 TO 11 JULY 1925.

Members of the R.I.B.A. and Allied Societies who propose attending the Conference are reminded of the following railway travelling facilities that are available.

From London to Durham a tourist ticket is issued, available for two months and with facilities for breaking the journey at all important points, for 58s. 3d. (3rd class).

From London to Newcastle the ordinary return fare is 67s. 10d.; but members could take a tourist ticket to Whitley Bay for 68s., enabling them to break their journey at Newcastle either going or returning, and by which they can, if desired, go on to the coast at any time within the period of two months.

Mr. Alfred Myers, railway agent, of 343, Gray's Inn Road, London, W.C., will be pleased to advise members who propose travelling from London and other centres, and also to issue tickets and book seats on application to him.

THE CITY CHURCHES.

It is proposed to arrange in the R.I.B.A. Galleries an Exhibition of Drawings and photographs of the Churches in the City of London from 5 to 13 June 1925.

The Committee in charge of the arrangements would be glad to receive from members the loan of any drawings suitable for exhibition. Drawings so lent will be insured and returned, carriage paid.

R.I.B.A. LECTURE, 18 MAY 1925.

Mrs. Arthur Strong, Assistant Director of the British School at Rome, is unavoidably prevented from delivering her lecture on 18 May.

Mr. G. Topham Forrest, F.R.I.B.A., the architect to the London County Council, has kindly consented to deliver a lecture on "The Architectural Development of American Cities" on the vacant date.

Mr. Forrest's lecture will be largely based upon his observations during his recent tour in the most important cities of the United States on behalf of the London County Council. He has brought back with him a great deal of most interesting and important information with regard to architectural methods and building practice, and his lecture on 18 May will be the first occasion upon which these results will be communicated to the profession and the public generally.

COMMISSION FOR INTRODUCTION OF BUSINESS.

The Practice Standing Committee having brought to the notice of the Council that certain firms of auctioneers and estate agents are demanding commissions from architects for the introduction of business, the Council desire to notify members that they must not accept any work which involves the giving or receiving of discounts or commissions, as by so doing they would be deemed guilty of unprofessional conduct and become liable under the by-laws to reprimand, suspension or expulsion.

Competitions

CONCRETE COTTAGE PRIZES.

MINISTRY'S CONDITIONS FOR "SHUTTERING" COMPETITION.

In view of an erroneous statement which has appeared in the Press that the Ministry of Health are offering a prize of £500 for the best system of "shuttering" suitable for the construction of concrete cottages, an official of the Ministry to-day (Thursday) said that the prize would be only £250. A further sum of £250 might be distributed in additional prizes, but this would be at the discretion of the Committee on New Methods of House Construction.

In adjudging the "shuttering," special consideration will be given to the following points: Economy; a satisfactory finish on the faces of the wall; the ease with which the "shuttering" can be handled by unskilled men; durability; facility for use with different designs of cottages; and adaptability for use with cavity walls.

Competitors are first required to send in drawings and descriptions, to reach the Ministry of Health not later than 31 May. From these proposals the Committee will select the most promising and call upon the proposers of these to submit samples of their "shuttering." Before the final selection is made, the methods will probably be subjected to tests under working conditions.

It is understood that the inventions submitted will be exhibited in the Housing Section at Wembley.

CAERPHILLY WAR MEMORIAL COMPETITION

The Competitions Committee desire to call the attention of Members to the fact that the conditions of the above competitions are not in accordance with the Regulations of the R.I.B.A. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime Members are advised to take no part in the above competitions.

BOROUGH OF GRAVESEND. NEW DIPHTHERIA BLOCK.

Members of the Royal Institute of British Architects must not take part in the above competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions

ASHFORD U.D.C. COMPETITION. ASSEMBLY ROOM CONVERSION.

The Competitions Committee desire to call the attention of Members to the fact that the conditions of the above competition are not in accordance with the Regulations of the R.I.B.A. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime Members are advised to take no part in the competition.

COMPETITIONS (continued)

PROPOSED REBUILDING OF THE ENGLISH BAPTIST CHURCH, PONTLOTTYN.

The Competitions Committee desire to call the attention of members to the fact that the conditions of the above competition are not in accordance with the regulations of the R.I.B.A. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime Members are advised to take no part in the competition.

NATIONAL COMMEMORATIVE WAR MONUMENT.

To be erected on Connaught Place, Ottawa, Canada. Closing date for receiving designs, 11 June 1925. Assessors Henry Sproatt, LL.D., R.C.A., Herman A. MacNeil, N.A., F. J. Shepherd, M.D., C.M., LL.D. Total cost not to exceed $100,000. Apply to the Secretary, Department of Public Works, Ottawa, Canada.

CHEAM PRESBYTERIAN CHURCH COMPETITION.

Members of the Royal Institute of British Architects must not take part in the above competition, because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

PROPOSED EXTENSION TO THE SHIREHOUSE, NORWICH.

Closing date for receiving designs 1 July 1925. Assessor, Mr. Godfrey Pinkerton, F.R.I.B.A. Premiums £150, £100, and £50. Apply to the Clerk of the County Council, Shire Hall, Norwich.

COMPETITION FOR A HIGH BRIDGE OVER COPENHAGEN HARBOUR.

Copenhagen Municipality hereby invite participation in an International Competition in connection with a High Bridge over Copenhagen Harbour.

The Municipality have set apart a sum of 35,000 kroner to be expended in prizes. There will be three prizes, the value of which will be fixed by a Judgment Committee consisting of Members of the Council, together with technicians chosen by the Municipality, the (Danish) Institute of Civil Engineers and the (Danish) Society of Architects. The largest prize will be at least 15,000 kroner.

Programme and particulars in Danish and English can be procured after 1 February 1925, from the City Engineer's Office, Town Hall, Copenhagen B, against a deposit of kr. 100.

The deposit is repayable after the judging, or previously if the drawings, particulars, etc., are returned in good condition. Projects to be delivered to the City Engineers Directorate, Town Hall, before mid-day, 1 September 1925.

After judgment the competing projects will be publicly exhibited at the Town Hall, Copenhagen.

LEAGUE OF NATIONS.

Competition for the Selection of a Plan with a View to the Construction of a Conference Hall for the League of Nations at Geneva.

The League of Nations will shortly hold a competition for the selection of a plan with a view to the construction of a Conference Hall at Geneva. The competition will be open to architects who are nationals of States Members of the League of Nations.

An International Jury consisting of well-known architects will examine the plans submitted and decide their order of merit.

A sum of 100,000 Swiss francs will be placed at the disposal of the Jury to be divided among the architects submitting the best plans.

A programme of the competition will be ready in February, 1925, and will be despatched from Geneva so that Governments and competitors may receive copies at approximately the same date. Copies for distant countries will therefore be despatched first.

The British Government will receive a certain number of free copies. These will be deposited at the Royal Institute of British Architects, and application should be made to the Secretary, R.I.B.A., 9, Conduit Street, W.1, by intending competitors.

Single copies can be procured direct from The Secretary-General of the League of Nations at Geneva, for the sum of 20 Swiss francs, payable in advance, but will not be forwarded until after the Government copies have been despatched.

On the nomination of the President of the Royal Institute, Sir John Burnet, A.R.A., has been appointed as the British representative on the Juryof assessors.

TECHNICAL COLLEGE, MIDDLESBROUGH.

The conditions of the above Competition have been submitted to the Competitions Committee of the R.I.B.A., and are found to be in accordance with the Regulations of the R.I.B.A.

THE NEW INSTITUTE FOR THE BLIND, BUENOS AIRES, ARGENTINE REPUBLIC.

An International Competition has been promoted for the Argentine Institution for the Blind, Buenos Aires, Argentine Republic.

A small number of copies of the Conditions have been deposited in the R.I.B.A. Library for the information of British Architects who may desire to compete.

A booklet containing the full text of the conditions with other information (translated from the Spanish) and a plan of the ground on which the Institution is to be erected is available for inspection at the Department of Overseas Trade (Room 42), 35 Old Queen Street, London, S.W.1.

COALVILLE PUBLIC BATHS COMPETITION.

The President of the Royal Institute of British Architects has nominated Mr. Alfred W. S. Cross, F.R.I.B.A., as assessor in this competition.

Members' Column

PARTNERSHIP WANTED.

A.R.I.B.A., age 32, Articled Pupil and A.A. School Training, experience with Provincial and Leading London Architect, requires partnership. Capital.—Apply Box 9525, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.C.

APPOINTMENTS VACANT.

The Government of Ceylon are in need of three temporary Architectural Assistants for the Public Works Department of that Colony. The particulars of these posts are as follows :—

M/13532. Senior Temporary Architectural Assistant. Salary £1,000 a year. Two years' service on agreement. Qualifications as follows: Age 28-35. Must have passed full examination for Associateship of the Royal Institute of British Architects. Must have been trained in a recognised School of Architecture named in the R.I.B.A. *Kalendar*. Preferably have had previous experience in the design of University or Scholastic buildings.

M/13520-2 (two appointments). Temporary Architectural Assistant. Three years' service on agreement. Salary £500, rising to £560 by annual increments of £30. Three years' service. Age 25-30. Must have passed the full examination for Associateship of the Royal Institute of British Architects.

The persons appointed will receive Colombo rent allowance amounting to 7½ per cent. of salary for a bachelor or 15 per cent. if married. In case Government quarters are provided the occupier will forgo his station allowance and pay 10 per cent. of his salary as rent. Free passages will be provided to and from Ceylon for the persons selected and, if married, for their wives and children.

Applications for the position should be addressed to M/13530, The Crown Agents for the Colonies, 4 Millbank, Westminster, London, S.W.1.

Architect's Assistant required by Nottingham architect. Should have sound knowledge of construction and be able to take off quantities. State age, experience and salary required.—Apply Box 2745, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

A first-class Assistant is required in a London Architect's office. An intimate knowledge of the constructional details of schools is essential.—Apply, stating experience, to Box 7525, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

CHANGES OF ADDRESS.

Messrs. Knapp-Fisher, Powell and Russell have moved from 133 Ebury Street to 4A Lower Belgrave Street, S.W.1. Victoria 5982.

Mr. F. Milton Harvey [*A.*] has changed his office address from 7 King Street, Cheapside, E.C.2, to 8 Broad Court Chambers, Bow Street, Covent Garden, W.C.2. Telephone No. : Regent 4008.

Messrs. Hendry and Schooling, Architects, have moved their offices to 53 Doughty Street, W.C.1. Telephone Number : Museum 7308.

ACCOMMODATION OFFERED.

Present Tenants (Architects) are moving to larger offices on 24 June. Accommodation, Two Rooms, one of which has separate entrance. Half share of lighting, heating, etc. Rent, £110 per annum.—Reply Box 7575, c/o The Secretary R.I.B.A., 9 Conduit Street, W.1.

F.R.I.B.A. has ground floor offices to let in good position in Westminster.—Apply Box 3045, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

Sussex.—Member offers Board-Residence in old Farm House in district full of old churches and half-timber houses. Electric light, bath, telephone, part use of motor-car. Advice given to students on measured drawings.—Apply to Box 1845, c/o The Secretary, R.I.B.A., 9, Conduit Street, London, W.1.

MR. HOWARD D. ARCHER.

Mr. Howard D. Archer [*A.*] has opened an office in York House, Government Road, Nairobi, Kenya Colony. Postal address, P.O. Box 55, Nairobi, Kenya Colony, at which address he will be pleased to receive trade catalogues.

MR. OLIVER GAUNT.

Mr. Oliver Gaunt, Associate of the Royal Institute of British Architects, has retired from the State Buildings Department of the Egyptian Government and has opened an office at No. 4 Midan Suares, Cairo. He will be glad to receive merchants' catalogues, etc.

MESSRS. NORRIS AND SHATTOCK.

Messrs. Norris and Shattock, L. and A. R.I.B.A., of 51 High Street, Guildford, and 16 Church Street, Godalming, have recently opened an office at 26 Buckingham Gate. Telephone No. : Victoria 2181.

SECRETARY AND ACCOUNTANT RECOMMENDED.

F.R.I.B.A. strongly recommends a Secretary and Accountant, specially trained in architects' offices, who is desirous of taking a similar post.—Apply Box 2635, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

APPOINTMENTS WANTED.

A.R.I.B.A. with small practice desires temporary post to assist Architect on or near the South Coast during June and July.—Apply Box 6525, c/o The Secretary R.I.B.A., 9 Conduit Street, W.1.

Associate is prepared to give assistance to Architects with sketches, working drawings, details, specifications, surveys, etc., at own office or otherwise. Moderate terms. Local knowledge of Kent and Sussex districts.—Apply Box 8525, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

OFFICE ACCOMMODATION WANTED.

A.R.I.B.A. requires light offices, or would consider sharing suite. Westminster or West district. Please state full particulars with inclusive terms. Box 1011, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

Minutes XIII

Session 1924–1925.

At the Annual General Meeting (being the Thirteenth General Meeting of the Session 1924–1925), held on Monday, 4 May 1925, at 8 p.m., Mr. J. A. Gotch, President, in the Chair. The attendance book was signed by 24 Fellows (including 11 members of the Council), 14 Associates (including 2 members of the Council), and 7 Licentiates. The Minutes of the general meeting held on 20 April 1925 having been published in the Journal, were taken as read, confirmed and signed by the Chairman.

The Hon. Secretary announced the decease of the following members :—

Mr. Louis Alfred Westwick, elected Fellow 1906.

Mr. Oswald Cane Wylson, elected Associate 1880, Fellow 1888.

Mr. Frank Protheroe, elected Associate 1881.

On the motion of the Hon. Secretary it was Resolved that the regrets of the Institute for the loss of these members be recorded on the Minutes of the meeting, and that a message of sympathy and condolence be conveyed to their relatives.

The following members attending for the first time since their election or transfer were formally admitted by the President :—

Messrs. F. H. Greenaway [*F*], J. E. Newberry [*F.*], S. V. Bradford [*A*]., G. W. Ferguson [*L.*], F. H. Waple [*L.*], and H. A. Wilkinson [*L.*].

The Secretary announced that the Council had nominated for election to the various classes of membership the persons whose names were published in the Journal for 4 April 1925.

The Chairman formally presented the Report of the Council and the Standing Committees for the official year 1924–1925, and stated that the Chairmen or other representatives of each of the Committees, whose reports were appended to the Council's Report, had been asked to attend the meeting so as to be in a position to answer any questions that might be asked in connection with their reports.

The Chairman having moved the adoption of the Report and invited discussion upon it, the Hon. Secretary seconded the motion, and a discussion ensued, in which Mr. William Woodward [*F.*] took part.

The motion having been put from the Chair, it was unanimously Resolved that the Report of the Council and the Standing Committees for the official year 1924–1925 be approved and adopted.

The Chairman stated that the list of attendances at the Council and Standing Committee meetings had been laid on the table and would be printed in the next issue of the JOURNAL.

Upon the motion of the Chairman, seconded by the Hon. Secretary, a vote of thanks was passed by acclamation to Mr. R. Stephen Ayling [*F.*] and Mr. C. E. Hutchinson [*A.*] for their services as Hon. Auditors for the past year. Mr. A. H. Goslett [*F.*] and Mr. F. J. Toop [*A.*] were nominated as Hon. Auditors for the ensuing year of office.

The proceedings closed at 8.55 p.m.

BUSINESS MEETING 8 JUNE 1925.

An election of members will take place at the Business General Meeting, 8 June. The names and addresses of the candidates (with the names of their proposers) found by the Council to be eligible and qualified for membership according to the Charter and Bye-laws and recommended by them for election, are as follows :—

AS FELLOWS (14).

ADAMS : PERCY TIDSWELL [*A.* 1909], Imperial Bank Building, Prince Street, Colombo, Ceylon. Proposed by Austin Woodeson, Herbert Wigglesworth, Arthur W. Kenyon.

BEST : HALSTEAD [*A.* 1925], St. John's Chambers, 87, Church Street, Blackpool ; 46, Read's Avenue, Blackpool. Proposed by the Council.

DUNN : HERBERT HENRY [*A.* 1896], County Hall, Cambridge ; The Woodlands, Great Shelford, Cambs. Proposed by A. Paul MacAlister, W. G. Watkins, Henry G. Gamble.

GLENCROSS : LESLIE HAROLD [*A.* 1919], 2 John Street, Bedford Row, W.C. ; " Bostraze," Hill Close, Harrow-on-the-Hill. Proposed by David Barclay Niven, Maxwell Ayrton, Dr. Raymond Unwin.

GUTHRIE : LEONARD ROME, M.C., M.R.I. [*A.* 1910], 37 Bruton Street, W.1 ; 3 Caithness Road, Brook Green, W. Proposed by Edward Warren, James S. Gibson, W. Curtis Green.

HOBSON : CAPTAIN JOSEPH REGINALD, M.C. [*A.* 1907], Public Works Department, Southern Rhodesia ; Salisbury Club, Salisbury, Rhodesia. Proposed by Granville E. S. Streatfeild, Wilfrid Travers, Arthur T. Bolton.

HOLT : HAROLD GUY [*A.* 1908], Windsor House, 46 Victoria Street, Westminster, S.W.1 ; 9 Sutton Court, Chiswick, W.4. Proposed by L. Sylvester Sullivan, George A. Lansdown, Frederick Chatterton.

SWANNELL : CHARLES MALCOLM [*A.* 1911], 1 Broad Street Buildings, Liverpool Street, E.C.2 ; 48 Alexandra Park Road, Muswell Hill, N. Proposed by Alfred Cox, W. Gillbee Scott, Fredk. Ernest Williams.

THOMPSON : MORRIS [*A.* 1910], Carbon Chambers, Hall Gate, Doncaster ; Bawtry Road, Doncaster. Proposed by P. A. Hinchliffe, Jno. Stuart, Alexander G. Bond.

TRENCH : GILBERT MACKENZIE, F.S.I. [*A.* 1908], Police Architect and Surveyor, New Scotland Yard, S.W.1 ; " Grassington," Foxley Lane, Purley, Surrey. Proposed by Percival M. Fraser, Dr. Raymond Unwin, Jno. Stuart.

WALKER : EDWARD HOLSWORTH [*A.* 1906], Carbon Chambers, Hall Gate, Doncaster ; " Sandilands," Bessaca, near Doncaster. Proposed by P. A. Hinchliffe, Keith D. Young, Stephen Shaw.

WALKER : MARSHALL EYRE [*A.* 1911], 21 Suffolk Street, Pall Mall East, S.W.1 ; Updene, West Hill Road, Woking, Surrey. Proposed by James Ransome, Wm. H. Atkin-Berry, Martin S. Briggs.

WARD : BERNARD MICHAEL [*A.* 1906], 3 Lord Street, Liverpool ; 88 Upton Road, Birkenhead. Proposed by Gilbert Fraser, E. Bertram Kirby, Hastwell Grayson.

WELCH : ROLAND [*A.* 1908], 20 and 22 Maddox Street, W.1 ; 12 Constable Close, Hampstead Garden Suburb, N.W.11. Proposed by Chas. H. Gage, Wm. Woodward, A. H. Kersey.

AS ASSOCIATES (5).

ASHBURNER : EDWARD HEATHCOTT, B.Arch.Liverpool [*Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice*], 5 Fairfield Road, Stockton Heath, Warrington. Proposed by Professor C. H. Reilly, S. Segar-Owen, Geoffrey Owen.

BLOODWORTH : CHARLES THOMAS, B.Arch.Liverpool [*Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice*], 138 Derby Lane, Stoneycroft, Liverpool. Proposed by Professor C. H. Reilly, W. B. Simpson, Edmund Wimperis.

JENKINS : WILLIAM VICTOR, B.Arch.Liverpool [*Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice*], 20 Manville Road, Wallasey, Cheshire. Proposed by Professor C. H. Reilly, Edgar Quiggin and the Council.

MAW : SAMUEL HERBERT [*Final Examination*], 274 Beaver Hall Hill, Montreal, Canada. Proposed by Philip J. Turner, Geo. A. Ross, Percy E. Nobbs.

VELARDE : FRANCIS XAVIER [*Passed five years' course at Liverpool University School of Architecture—Exempted from Final Examination after passing Examination in Professional Practice*], 16 Withert Avenue, Higher Bebington, Cheshire. Proposed by Professor C. H. Reilly and the Council.

AS HON. ASSOCIATES (4).

DEARMER : THE REV. PERCY, M.A., D.D., Professor of Ecclesiastical Art and Lecturer in Art, King's College, University of London ; 9 Embankment Gardens, Chelsea, S.W.3. Proposed by the Council.

EARLE : SIR LIONEL, K.C.B., K.C.V.O., C.M.G., J.P., 14 Sloane Gardens, S.W. Proposed by the Council.

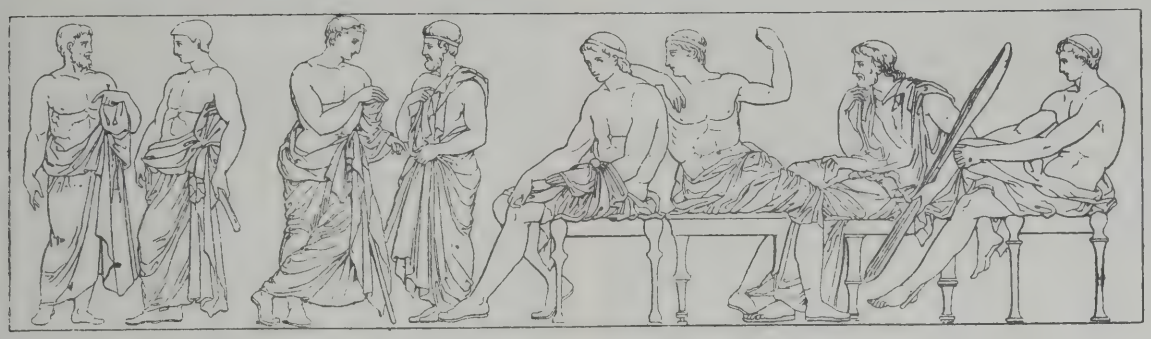
SHAW : EVELYN CAMPBELL, M.V.O., 39 Gilston Road, S.W.10. Proposed by the Council.

TURNER : LAURENCE ARTHUR, F.S.A., 56 Doughty Street, W.C.1. Proposed by the Council.

It is desired to point out that the opinions of writers of articles and letters which appear in the R.I.B.A. JOURNAL must be taken as the individual opinions of their authors and not as representative expression of the Institute.

R.I.B.A. JOURNAL.

Dates of Publication.—1924 : 8th, 22nd November; 6th, 20th December. 1925 : 10th, 24th January; 7th, 21st February; 7th, 21st March; 4th, 25th April; 9th, 23rd May; 13th, 27th June; 18th July; 15th August; 19th September; 17th October.



The Natural and Artificial Lighting of Buildings

Discussion on Mr. Percy J. Waldram's Paper

(*See* JOURNAL, 9 *May*, *pp.* 405—426)

MR. WILLIAM T. JONES [*F.*], PRESIDENT, NORTHERN ARCHITECTURAL ASSOCIATION, IN THE CHAIR

DR. LEONARD HILL, F.R.S. (in proposing a vote of thanks to Mr. Waldram), said: I have been honoured by the Institute in being asked to move this vote of thanks. I have listened to the Paper with the greatest interest, and I think Mr. Waldram has represented very accurately the facts concerning light which are known and recognised by physiologists. There is one point I should specially like to lay stress on, one which has not been mentioned at all by Mr. Waldram, and that is the influence of light on the health of the people. And in that connection we have to consider not only the visible rays, but also those invisible rays which are called ultra-violet rays, lying beyond the violet end of the spectrum, which can be shown by the quartz spectroscope and by the use of the fluorescent screen. These invisible ultra-violet rays come both from direct sunlight and from the blue sky and bright white clouds. If you have an unobstructed view of whole sky, the blue sky and the white clouds give a greater amount of those rays than are received direct from the sun itself, even when the sun is high in the heavens in the summer time. When the sun is low in the horizon, the ultra-violet rays coming from the sky or from white clouds are in excess of what come from the sun. Those ultra-violet rays have a most powerful effect on the skin, although they are invisible and quite insensible to us. After a latent period, when you have been exposed to a high concentration of ultra-violet rays, such as in the Alps, or in bright summer here on the seashore, you get sunburn resulting. After exposure you get an intense flushing of the skin, irritation and soreness, and maybe even blistering, and afterwards a peeling of the skin and a pigmentation of it. These ultra-violet rays have an extraordinary power of promoting good health; we use them in open-air sanatoria, and they have been used for years for the cure of what we call "surgical tuberculosis," that is when the disease attacks bones, joints and glands. Ollier and Bernard in the Alps, and Gauvain at the Treloar Cripples' Hospital, and many other people are using these rays in that way.

These ultra-violet rays have very little power of penetration; they act on the living cells just beneath the horny layer of the outer skin or epidermis; they do not penetrate through to the blood. They act on those cells so as to provoke the reaction which leads to flushing of the skin, etc., which I have mentioned. And that reaction on the skin of the whole body is very powerful in promoting the resistance of the body to disease and has a great curative effect. We can get it either by exposure of the whole body to the sunshine or the sky, by using arc lights as sources of ultra-violet rays, by using an incandescent tungsten filament lamp with a quartz globe, or a substitute for quartz which will allow ultra-violet rays to go through. Ordinary window glass takes them out—that is, the essential rays of the wave-length which acts on the skin. Smoke and fog, cloud and mist take them out; clothes take them out. So what with the glass, the clothes, the smoke pollution and the fogs of our cities, is it any wonder we are practically deprived of these health-giving ultra-violet rays?

The problem for the architect to consider is how we can get more of these rays. The author of this Paper has shown how to get more light, and he has shown the extraordinary deficiency of the light which we get in these big cities, at the bottom of wells and places of that sort. It has been said by some that we should put up enormously high buildings—"skyscrapers," as in New York. If we do we shall cut out light, and if we are not very careful we shall cut out the ventilating power

of the air, which depends on its free movement. That has a most powerful effect on the health. The cooling power of the air, which depends on its movement, is infinitely more important than the chemical quality of the air. The quality of the air in our worst-ventilated rooms—I am speaking of rooms, not of hermetically sealed places—the excess of carbonic acid and deficiency of oxygen is never such as to matter physiologically in any degree; the essential fault in badly ventilated rooms is the heat stagnation, the deprivation of the body of the cooling and evaporating power which the air should have, and which we get when we are exposed to the outer air. The wild man who is practically unclothed keeps up his ventilating power, and that maintains his appetite and his vigour; the ultra-violet rays are continually having their power on his skin and promoting his health. We cut ourselves off from adequate ventilation by means of clothes, walls and artificial heating, so we do not get the benefit of this health-giving source, and we have to consider how we can bring about improvement.

There is also the question of smoke pollution, and I think that in this Paper that point requires to be put forward. We have got now into such difficult conditions in our big cities—hundreds of miles of mean streets spread over our country, obstructions which reduce everything, smoke pollution, and so on—that we have got into an extraordinarily bad position and condition, and it is a very difficult problem how to get out of it. Fortunately, in the matter of ultra-violet rays, we can anyhow mitigate it by instituting a general recourse, in the winter, to arc-light baths as a substitute for what we deprive ourselves of in natural light. I believe the day is not far distant when arc-lights will be put in all baths in public schools and in the bath-rooms of private houses; powerful mercury-vapour lamps and naked arc-lights must be used with expert advice, but incandescent tungsten filament lamps with quartz or a suitable glass globe are safe. And one suitable window glass has been introduced by Mr. Lamplough, which he calls "vitaglass." I have here a sample of it. It is a rolled or cathedral glass. It lets through ultra-violet rays well, and it may be useful for verandahs, skylights of schools, factories, and open-air shelters; anywhere where you want to get ultra-violet rays in. And that glass can, I think, be blown clear. If so, and if it can be done cheaply, it would be useful for the globes of tungsten filament lamps. We are introducing such lamps with quartz globes into the new monkey-house of the Zoo; animals rejoice in them. Quartz globes are very expensive, but if the lamps can be made cheaply with this new glass we shall be able to get ultra-violet rays from our incandescent electric lamps. The rays are very weak, but by having them near enough and taking baths naked we can get what we want in the winter.

The author has mentioned the measurement of illumination, and I have brought here the Eder photometer, the use of which was introduced by Dorno, who has an observatory at Davos, in Switzerland. This is a wedge of smoked gelatine; it is in a frame-work, and has a scale at the back of it, and a piece of sensitised paper behind it. It is exposed to daylight, covered with opalescent glass, so that sunshine is turned into diffused light, and the instrument is so arranged that it keeps wet out, rain, etc., and it is exposed all day. Then you note how far down the sensitive paper is influenced. You see the scale printed off, either a little way or a long way down the paper. It has been used in some 50 different observatories in Europe, and we have taken it up in this country. Through the help of the Meteorological Office, records are being taken by it at several stations daily, and the papers are sent to the National Institute of Medical Research, and we develop them and chart them out. We are also recording ultra-violet rays daily at the National Institute of Medical Research, and we have got observers in clean country and smoky cities to do the same. We have a standard solution of acetone coloured with methylene blue, and that is put into a quartz tube, and the tube is exposed all day on the roof, and the amount of fading is measured against a set of standard tints, and the result is published, for Hampstead, in *The Times* daily. The method shows that in Kingsway, compared with country districts like Bexhill, or St. Ives in Cornwall, the amount of ultra-violet rays is about half to one-third that which is being got in the country places. So that the robbing of ultra-violet rays by smoke pollution in the big cities is enormous, and what is coming through is being cut off by walls, glass and clothes.

Mr. J. HERBERT CUNLIFFE, K.C., M.P. (in seconding the vote of thanks), said: I imagine that the only reason I have been invited here to-night is because, in the course of my professional practice, it has been my fortune to be concerned in a number of what are known as "light" or "ancient light" cases, some of which have become known as "leading cases." I would like, if I may, to acknowledge the great debt which I owe in connection with those cases to the members of your profession for the great assistance which they have always rendered to me in assisting me to understand matters which were out of my ordinary purview. There has been, as I am sure we all recognise, in recent years a great advance in realising the necessity for more sunlight and more light in our business, professional and ordinary habitations; and while the controversy will continue to go on, it is of course, of enormous advantage that the problems should be faced and investigated in a more thorough and scientific way than has been the case in the past. I am sure you will all agree that in regard to the great advances which have been made in recent years no one has done more than the reader of the Paper to-night. No one pretends—and, I imagine, least of all Mr. Waldram—that the problems are by any means completely solved. Indeed, so far as those of us are concerned who are engaged, in the course of our ordinary occupations, in attempting to solve them, whether it be as members of your great profession or as members of my profession, we shall as long as we live find some portion of those problems waiting to be solved. They call, I venture to think, for not only the assistance of your great profession, but also for the assistance of mine, and I think they may, in certain circumstances, call for the intervention of the Legislature. In what direction that will take place I know not, and we shall have to await further investigation before it is possible to decide. But let me take, if I may, two questions which occurred to me during the reading of the Paper for which we have not by any means yet got a solution.

Supposing there is an ancient light. Have we quite solved, do you think, the problem as to how far a man who makes an inadequate use of his opportunities of lighting his own room is entitled to throw a larger burden upon his neighbours ? Many of us have come across, in our work, the case of an old building with an admittedly ancient light, in which any particle of infringement lessens an obviously insufficient light, and leaves the owner with less light than is reasonably required for the ordinary purposes of business or inhabitancy. I put this as one of the many phases of the many questions which we shall all, at some time, have to consider. Supposing it be that the owner of the ancient light could, by a comparatively small alteration of his own premises, flood those premises with light, is it right that he should be able to prevent the erection of a building adjacent to his premises merely because it will diminish the small light which he already has ? What the answer may be I shall not venture to say, but it is one of the problems which have got to be probed in the future, and in which it may be that the Legislature will have to interfere if your profession in combination with mine cannot find a satisfactory answer to the question.

May I put another one—on a different line ? Is it quite clear that we are right in limiting the rights of light to ancient lights ? I think some members of my profession, and possibly some members of yours, would hold up their hands in horror at the idea that there can be a question of that kind ; but in listening to Mr. Waldram I could not help that reflection passing through my mind. If it be, as Dr. Hill pointed out, and as Mr. Waldram pointed out too, and as we are all daily coming more to recognise, that the essential thing in our daily life, whether it be in our residence or in our office or business premises, that we should have as much light and sunshine as possible, is it really right, as a matter of public policy, that the preservation of that light should be limited to cases where a man has acquired, by prescription, the right to prevent his neighbour from putting up a very high building ? If light is something which is daily becoming more and more recognised as one of the essential things in our daily lives, why should it be that the law is powerless to prevent a man putting up alongside a building which has had lights for say 19 years, a high building which completely blocks out all the light coming to the building already in existence ? Nobody recognises more than I do that in attempting to interfere with the right of the man to use his own property as he may think fit you are interfering with a right which has been recognised for all time with regard to the ownership of English land. But I cannot help feeling, when I hear what Dr. Hill says, and when I become impressed, as I think everybody must have been impressed in recent years, by the scientific knowledge which is given to us as to the importance of light and sunshine in our daily lives, I cannot help thinking that the time may arise when it may be the duty of the Legislature to say, " We are not going merely to regard rights of lights which have existed for the prescriptive period, but we are going to interfere in cases where a man is so using his own property that he will interfere with the fair amount of light which his neighbour ought to be entitled to have."

I put these forward as instances of the difficulties which we or our successors will have to consider. I do not pretend that I have got a simple answer to these, or to the many other questions which will arise. But what I venture to suggest, diffidently, in regard to these questions is that they all point to this : that this question of light—not only in its legal aspects and rights, but in its bearing on our health, as Dr. Hill pointed out—is of the greatest public importance, and that it involves many problems, to the solution of which it is in the public interest we should get all the best scientific evidence which it is possible to collect. And those who, like Mr. Waldram, have devoted many years to the investigation of these problems are, I venture to think, entitled not only to the thanks of your great Institute, but also to the thanks of the whole community. It is for this reason that I am glad to add my small voice to this vote of thanks to Mr. Waldram for his Paper.

Mr. C. C. PATERSON (Institution of Electrical Engineers) : At this late hour I will not detain you with any minute examination of the details of the paper ; I can only express my appreciation, and the appreciation of the members of my Institution who are here, to the author of the paper for the very clear way in which he has put it before us.

I do not know that I can follow the author in the paragraph at the top of page 406, in which he draws a distinction between the extent to which the eye will adapt itself to artificial light, as compared with the adaptation of that organ to ordinary daylight. This is surely a question of how light is distributed, and how the illumination is produced in any particular room. The retina of the eye can adapt itself to a light variation of 1,000 to 1, or even 10,000 to 1 ; but even in conditions of dark adaptation there is a certain minimum necessary in order to read. This we reach somewhere near the lower amounts of ordinary artificial illumination which are provided in buildings. But if that artificial illumination is increased many times, I do not think that, if it were properly produced and distributed, the eye would have any difficulty in adapting itself to the higher illumination and deriving equivalent benefit from it.

Mr. D. R. WILSON (Secretary, Industrial Fatigue Research Board) : I will simply ask Mr. Waldram two questions.

I am particularly interested in industrial lighting, and there is one effect which has been clearly established and in regard to which I have been puzzled for an explanation. It occurs in the weaving of certain fine classes of goods. In daylight the rate of production in weaving is about 10 per cent. higher than in artificial light ; and that is not due to the greater illumination, because even when there is efficient artificial lighting the same fact holds. I wondered whether it was due to elimination of shadows in daylight owing to the greater size of the source of the light, because weaving is carried on in sheds lighted with skylights, so that during daylight shadow would probably be less pronounced.

The second point was in connection with Mr. Waldram's statement as to the very small contribution to the lighting from the walls compared with the light coming from the windows. From what I know of the subject that has been established, but I suggest that the lighting from the walls of a room is a very important factor, especially

in the case of factories and other industrial buildings. We distinguish objects and details very largely through contrast, and though the illumination of a room may not be very much affected, the contrast which results from a light wall is a very important factor, and one which should be taken into consideration in the construction of buildings.

Mr. THOMAS E. RITCHIE, A.M.I.E.E.: I should also like to thank Mr. Waldram for the very interesting and very valuable paper which he has given us this evening. Those of us who know him and his work expect much from him, and in this instance he has certainly lived up to, if indeed he has not surpassed, his reputation.

His reference to the use of a photographic exposure meter for the purpose of measuring illumination is not quite clear to me, and I should be glad if he would explain it.

I understand that the photographic exposure meter responds almost solely to the actinic component of the light, and that for this reason what it actually measures is the quality of the light—that is to say, its actinic character, rather than its volume or intensity.

I believe I am correct in stating that if such a meter were put into a room with an intensity of, say, 100 foot-candles of non-actinic light it would register little or nothing, although, of course, the intensity of illumination would undoubtedly be there.

Similarly in daylight such a meter exposed to the yellow or reddish light of a morning or evening sky would only respond very faintly, although the actual quantity (foot-candles) of light might be very considerable.

Mr. J. W. T. WALSH (National Physical Laboratory): All who are interested in illuminating engineering look upon Mr. Waldram as an expert in natural illumination, and his Paper forms an excellent summary of the vast amount of work which he has done in this very important field. There are, however, one or two small points of detail on which I would join issue with him.

First, I cannot quite agree with him about the comparative unimportance of diffused light in rooms—that is, light which does not come directly from windows. I think that light becomes of importance just in the very cases where one is trying to get all the light one can, namely, in a very deep room with an obstructed window. It is in such cases that it becomes important to look after the lightness and cleanliness of the ceiling and the walls. And it is important to remember, in such cases, that over 50 per cent. of the light may be due entirely to reflections from walls and ceiling.

Also I do not quite agree with him that people can apparently do with less daylight than artificial light. He mentions the figure of one foot-candle as being probably a satisfactory figure for clerical work in daylight, whereas the intensity recommended for artificial light is at least three times that figure. I believe that one of my colleagues at the National Physical Laboratory, Mr. Buckley, put his finger on the fallacy in the argument when he said that the idea of a minimum illumination of one foot-candle being found satisfactory arose from the fact that it was used only for a brief period, when the light was failing, viz., at twilight. People can carry on for a time in the fading light, but this is only for the short period before the artificial light is turned on.

I agree with what Mr. Paterson said in regard to high illuminations experienced in daylight, and believe that the objection which some people have to high illumination in artificial light is due to such other effects as glare and the way in which the light is arranged, and is not due to intensity. I think artificial light and daylight are absolutely equivalent when of the same intensity.

Mr. A. K. TAYLOR (National Physical Laboratory): There is one point on which I do not agree with the author, and that is (as mentioned by Mr. Walsh) his statement on the value of diffusely reflected daylight. He says " this has been measured by the author and the N.P.L. and Fig. 11 shows what a small addition it makes to the total illumination." Now from some tests made at the N.P.L. at the beginning of 1923, in a large room 11 feet high, 36 feet long and 27 feet deep, the walls and ceiling having a reflection factor of some 45 per cent. and 70 per cent. respectively, it was found that the reflected, or indirect, daylight factor (sill ratio) at the centre of the rooms, 3 feet above the floor, was some $\frac{3}{4}$ per cent. and the direct daylight factor was some $3\frac{1}{2}$ per cent.; near the back wall the corresponding figures were $\frac{1}{2}$ per cent. and 2 per cent. respectively.

Later, in 1924, some further measurements were made, using improved methods with a deep and narrow room 11 feet in height, 9 feet long and 27 feet deep, the reflection factor of the walls and ceiling being some 60 per cent. and 75 per cent. respectively. The reflection daylight factor at the centre of the room 3 feet above the floor was 2 per cent. and the direct daylight factor was $2\frac{1}{2}$ per cent.; while at the back of the room the figures were 1·4 per cent. and 0·6 per cent. respectively. It will be seen that the ratio of the indirect to the direct daylight factor was, for the first case, 20 per cent. at the centre and back of the room, and for the second case 80 per cent. and 230 per cent. at the centre and back respectively, all the figures being for dull days. It is probable that the reflection daylight factor measured in the first series was rather low judging by our more recent experience, though the effect of the alteration in the length of the room and an increase in the reflection factor of the walls will partly account for this.

With a good white ceiling the results last quoted were found to vary with the weather and with the reflection factor of the ground outside the window; a mean increase of some 35 per cent. being observed for sunny weather with an approximate reflection factor of some 20 per cent. for the ground.

It would appear that if some measurements were made in light wells where the reflection is not less than 50 per cent., a quite appreciable reflection daylight factor will be found—due probably to continued reflections.

Mr. FRANCIS HOOPER [*F.*]: An apology seems necessary on rising at this juncture. It is, I suppose, because our members rely on the perfect manner in which Mr. Waldram expresses himself and illustrates his conclusions, and also on the fact that the Paper will be published in the JOURNAL, that so few of our own members are present. I propose an adjournment of the discussion,

if the gentlemen who have been so good as to come prepared to take part could make it convenient to come again, say three weeks hence, and that this is convenient to the Council. Such experts as Dr. Hill and Mr. Cunliffe have opened up the medical and legal aspect and it is obvious that the subject is of the very greatest importance. In my opinion we have rarely had a more important and vital subject before this Institute. Our membership and activities extend over the British Empire and far beyond latitude 51. Much might be elucidated on the measurement of light and on adequate lighting for various purposes. We have experts on Factory, Home, and Hospital construction, who may have much to add. Could this Paper be circulated, and another meeting be arranged, an intensely profitable discussion might result.

The CHAIRMAN : I am advised that an adjournment will be a very difficult matter. I think everybody is agreed that the subject is of very great national importance, but an adjournment at this period, with the programme so filled up as at present, can hardly be arranged. We might look forward, in the next session, to another Paper from Mr. Waldram, if he will give us one. We must trust to his good nature about that.

Dr. R. S. CLAY (Principal, Northern Polytechnic) referred to the difficulty of working in a room with blackened walls, owing to the intensity of the shadows in which small articles became invisible. He also gave, as an interesting example of psychological effect, the instance of a students' mechanical drawing office in which the illumination below artificial light sources was increased by 50 per cent., and the intensity of shadows reduced by fitting large diameter white paper shades with tissue paper bottom screens. Those using the room, however, preferred the bare lamps and removed the shades. He suggested that daylight charts could also be used for artificial lighting and should be put on the market.

He asked for an explanation of the small values given to angles near the zenith.

Mr. LEON GASTER (Hon. Secretary of the Illuminating Engineering Society) expressed regret that Mr. Waldram should have attempted to deal with artificial as well as natural lighting. It was impossible to deal adequately with both subjects, and the small space allotted to artificial lighting hardly conveyed to architects how much there was to be done in that field.

The following contribution to the discussion on Mr. Waldram's Paper has been received from Mr. W. C. CLINTON (University College) :—

Mr. Waldram is to be congratulated on the way in which he has presented the main facts in connection with daylight and artificial illumination in such a limited space and without the use of any obvious mathematics. Of course, the mathematics are there, but are very discreetly hidden.

A small matter of correction is that Fig. 2 should be regarded as a great circle section of a sphere.

The value of good reflecting surfaces for walls has perhaps been rather underrated; at any rate, in so far as the improvement of artificial lighting due to their use is concerned. For instance, in one of the few cases in which exact calculations can be made, that of a uniform source of light at the centre of a sphere or cube, it will be found that an increase of the reflection coefficient of the interior surface from 30 per cent. to 70 per cent. much more than doubles the total illumination at any point on that surface.

The minimum values of artificial illumination for different conditions considered as sufficient ten or fifteen years ago are no longer regarded as adequate. The human eye has not altered, but there is a general tendency to use more light with every step in the increase of efficiency of its production and consequent reduction of cost. As long as this tendency is guided along right lines, in regard to such matters as the avoidance of retinal fatigue and glare, it is a thing to be encouraged.

Mr. WALDRAM : Before replying to the discussion I should like to express our thanks to Dr. Leonard Hill for his extremely important testimony to the medical value of the Lamplough " Vita " glass. The curative effect of natural light is, of course, well known. Many of its cures are to us laymen little short of miraculous. Dr. Hill has, on occasion, kindly lent me authenticated photographs of diseased children and old people which were almost too horrible to be thrown on the screen ; one could only wish each case a speedy death. But side by side were the same cases after treatment by natural light in open air sanatoria, the very embodiment of cheerful health, delightful to look upon.

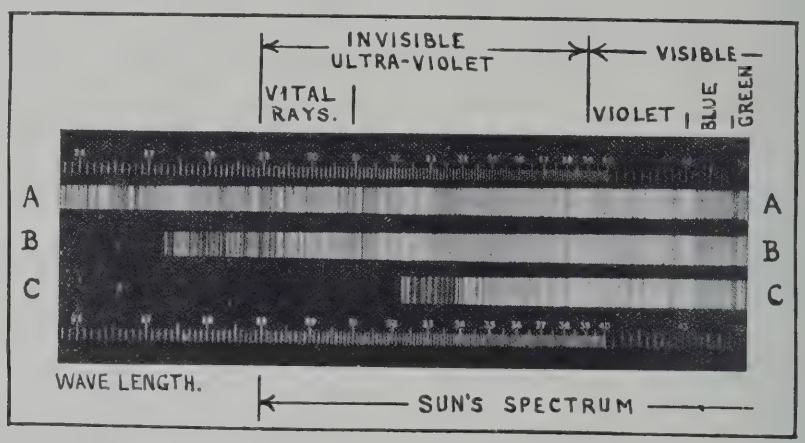
It has long been a source of regret that window glass should be opaque to these wonderfully curative ultra-violet rays. A window glass which can secure Dr. Hill's testimony opens up wonderful possibilities. Curative light baths without undue exposure, without direct sun aspect, without expensive quartz lamps, are surely a matter of enormous importance to architects. Vita glass is quite clear and transparent. It costs little more than ordinary polished plate, and I understand that the makers, Messrs. Chance Bros., of Birmingham, are prepared to quote specially low terms to hospitals.

Mr. Lamplough has kindly supplied me with a photograph illustrating the visible, the invisible, and the vital or curative parts of the spectrum of natural light, which is so instructive that I propose to beg space for it from our long-suffering editor.

For convenience a sufficient length of the spectrum of the ordinary laboratory source of ultra-violet light—an electric arc between iron poles—is taken by a Hilger quartz spectrograph and photographed direct (Spectrum A), then through Vita glass 2 mm. thick (Spectrum B), and then through ordinary window glass of the same thickness (Spectrum C). The result speaks for itself.

Mr. Cunliffe also gave us much food for thought from another aspect, and we are, I am sure, equally grateful to him. His valuable remarks remind us that although ancient light law is largely individual in its operation and object, it is communal in its effect. Certainly in this country the community have benefited by it. Other countries which had not the benefit of our ancient light law do not regard our towns as being backward because buildings are reasonably low. They are following our example, even in America. I sincerely trust that the present ancient light law will never be relaxed in deference to those who wish

to build as they like, but rather that in the public interest all new buildings should be compelled to provide adequate light to all habitable rooms ; kitchens as well as dining rooms, and typists' back offices no less than managers' front rooms ; and should also be compelled to leave adequate sky for the lighting of buildings on surrounding land. This is, I think, practically the Scotch law and practice. It will be interesting to watch Sir E. Cooper's great new building for Lloyds and the Royal Mail Company, where greatly increased height has been secured without damage to its own or to its neighbours' lights by judicious setting back where necessary. Personally, I anticipate that by this wise policy the new building will gain both in value and in dignity. I cordially agree with Mr. Cunliffe that there is a great deal yet to be done. We need clear and well-recognised standards of legal nuisance, greater knowledge of the best remedies for badly lit rooms, and above all wider knowledge of those simple methods of securing adequate



light which are capable of speedy application in the design of new rooms.

Mr. Paterson and Mr. Walsh may be quite correct in assuming that if we could have artificial light sources as large as windows or skylights our eyes would be as placidly content over variations as huge as those of daylight. Certainly they are not apparently troubled very much by comparatively high intensities of indirect artificial lighting.

I may be quite wrong in attributing any special value to the spectrum of daylight. The matter is of no small importance and psychological data is, I believe, lacking. The immediate practical point is that we cannot judge the intensity of daylight in the same way that we can judge artificial light as usually installed.

The trouble in weaving mentioned by Mr. Wilson is due to a variety of causes, the most important being, I think, the difficulty of illuminating, by artificial light as usually installed, the back of the tiny " heald " eyes through which every broken and pieced warp thread must be passed, even though the sleys, battens, shuttles and all the front parts of the loom may be well lit. There are many reforms long overdue in the lighting of textile mills, both natural and artificial.

Mr. Walsh, Mr. Taylor and Professor Clinton mention cases where reflected light from walls and ceilings formed a high percentage of the total available. In many cases, as pointed out on page 415, it constitutes the whole. In the model test rooms instanced by Mr. Taylor the horizon was obviously unobstructed. With even a moderate degree of obstruction a cell ratio due to reflected light of over 0·2 per cent. is, I think, unusual. Walls and ceilings play a much larger part in artificial lighting.

For the exact investigation of the value of side to side reflection in light wells I have only been awaiting a little spare time since February last. The apparatus is all ready and Sir F. Baines has very kindly afforded me facilities at the Office of Works.

With regard to the relative amount of illumination required by day and under artificial light, I would point out that this can be tested on any dull day and not merely for short periods at twilight.

My thanks are due to Mr. Ritchie for drawing attention to an obvious omission.

I should have mentioned that the photographic exposure meter suggested as a cheap form of photometer was intended only for ascertaining daylight ratios approximately. Being comparative, measurements out of doors and indoors are not affected by a colour difference which affects both equally.

I quite agree with Mr. Hooper that the practical details of factory and hospital lighting demand early attention from this Institute.

Dr. Clay will find the information he requires in the paper published by Messrs. Batsford.

In acknowledging your generous vote of thanks for a long and tedious paper I can only admire your patience and envy your forbearance.

The Annual Dinner

The Annual Dinner of the Royal Institute was held on Tuesday, 12 May, at the Trocadero Restaurant, Piccadilly, W. The President (Mr. J. Alfred Gotch) was in the Chair. The following is a list of the company present :

The Right Hon. Viscount Peel, G.B.E., H.M. First Commissioner of Works ; the Right Hon. Lord Sumner, G.C.B., P.C.; the Right Hon. Lord Charnwood ; the Right Hon. Lord Riddell ; The Right Hon. Sir Joseph Cook, P.C., G.C.M.G., the High Commissioner for Australia ; Sir Atul Chatterjee, K.C.I.E., the High Commissioner for India ; Mr. J. S. Smit, the High Commissioner for South Africa ; Sir Lionel Earle, K.C.B., K.C.V.O., C.M.G., Secretary of His Majesty's Office of Works ; Sir Charles Knightley, Bart., Chairman, Northampton Quarter Sessions ; the Vice-Chancellor, the University of Oxford (Mr. J. Wells, M.A.) ; the Vice-Chancellor, the University of Cambridge (Mr. Albert C. Seward, Sc.D.) ; the Vice-Chancellor of the University of London (Professor E. A. Gardner, Litt.D.) ; Sir Michael Sadler, C.B., K.C.S.I., Master of University College, Oxford ; Sir Walter Peacock, K.C.V.O.; Sir D. Y. Cameron, R.A.; the Rev. H. F. Westlake, M.V.O., F.S.A., M.A.; Mr. R. C. Norman, L.C.C.; Sir Frank Dicksee, President of the Royal Academy ; Sir Edwin Savill, President of the Surveyors' Institution ; Mr. Edward J. Partridge, Past President of the Society of Architects ; Mr. J. C. Squire, President of the Architecture Club ; Mr. John Croad, President of the National Federation of Building Trades' Employers ; Mr. Fred Thorne, J.P., President of the London Master Builders' Association ; Major R. J. Holliday, M.C., President of the Institute of Builders ; Major James Petrie, O.B.E., President of the Institution of Structural Engineers ; Mr. Thomas Barron, President of the National Federation of Building Trades Operatives ; Mr. Gilbert Bayes, Master of the Art Workers' Guild.

Professor Patrick Abercrombie ; Mr. Maurice B. Adams ; Mr. F. G. Baker ; Mr. Christian Barman ; Major Harry Barnes (Vice-President) ; Mr. Oswald Barron ; Major Lionel Barry ; Mr. Frank Bastable ; Mr. N. Bastable ; Mr. F. C. Bayliss ; Mr. J. Stanley Beard ; Mr. T. P. Bennett ; Mr. W. Beswick ; Mr. Trevor Bowen ; Mr. C. W. Bowles ; Mr. Bertram Bridges ; Mr. H. W. Brittan ; Major H. P. Brown ; Mr. Norman E. Brown ; Mr. Herbert T. Buckland (Vice-President); Mr. H. L. Buckle ; Mr. Leonard H. Bucknell ; Professor R. M. Butler ; Mr. W. F. Butterfant ; Mr. H. L. Cabuche ; Lieut-Colonel H. P. L. Cart de Lafontaine ; Mr. E. O. Chadwick ; Mr. H. B. Challen ; Mr. Frederick Chatterton ; Mr. H. S. Chorley ; Mr. S. D. Clements ; Mr. Heaton Comyn ; Mr. J. Corfield ; Major Hubert C. Corlette ; Mr. H. W. Couchman ; Mr. Dudley Cox ; Mr. R. H. Cunliffe ; Mr. T. S. Darbyshire ; Mr. C. A. Daubney ; Mr. E. Guy Dawber (Vice-President) ; Mr. Mervyn B. Davie ; Mr. Arthur J. Davis ; Mr. A. W. Davson ; Mr. Percival Davson ; Mr. F. J. Dexter ; Mr. H. Alderman Dickman ; Mr. J H. Dixey ; Mr. Rudolf Dircks ; Mr. J. Murray Easton ; Mr. W. S. Edgson ; Mr. C. Ernest Elcock ; Mr. H. Godfrey Evans ; Mr. J. H. Evans-Jackson ; Mr. C. G. W. Eve ; Mr. H. W. Eve ; Dr. Oscar Faber ; Mr. E. H. Fairbairn ; Mr. W. T. Fairbairn ; Mr. Percy J. Fay ; Sir Banister Fletcher ; Mr. C. G. E. Fletcher ; Mr. Henry M. Fletcher ; Mr. Percival M. Fraser ; Mr. A. Goddard ; Mr. F. W. Goodenough ; Mr. H. R. Goodrham ; Mr. Sidney C. Gordon ; Professor Frank Granger ; Mr. Hugh Green ; Mr. W. Curtis Green, A.R.A.; Mr. Alderman Gunton ; Mr. E. Stanley Hall ; Mr. H. Austen Hall ; Mr. Everard J. Haynes ; The Very Rev. E. L. Henderson ; Mr. H. Sesom Hiley ; Mr. H. Peter Hing ; Mr. Barry Holderness ; Mr. George Hornblower ; Mr. T. C. Howitt ; Mr. G. J. Howling ; Mr. George Hubbard ; Mr. P. W. Hubbard ; Mr. A. A. Hudson ; Sir John Hunt ; Mr. J. Douglas Hunter ; Mr. Frederick Hyde ; Mr. S. Gordon Jeeves ; Mr. Bernard Jessop ; Mr. J. J. Joass ; Mr. A. H. Jones ; Mr. Francis Jones ; Mr. Ivor P. Jones ; Mr. Norman Jones ; Mr. Arthur Keen (Hon. Secretary) ; Captain M. G. Kiddy ; Mr. E. Bertram Kirby, O.B.E. (President of the Liverpool Architectural Society ; Mr. H. T. C. de Lafontaine ; Mr. W. R. M Lamb ; Mr Herbert Langman ; Sir Walter Lawrence ; Mr. D. Ivor Lewis ; Mr. S. Lichtwitz ; Mr. A. H. Lister ; Mr. Ian MacAlister (Secretary R.I.B.A.) ; Mr. Robert Mann ; Mr. Fred May ; Mr. Charles Marriott ; Mr. H. W. Martin-Kaye ; Mr. Ralph Milbourn ; Mr. T. R. Milburn ; Mr. E. Williamson Milne ; Mr. Oswald P. Milne ; Mr. E. C. P. Monson ; Mr. E. E. Morris ; Mr. Arthur Mountford ; Mr. John Murray ; Mr. R. C. Norman ; Mr. Frank Osler ; Sir Richard Paget ; Mr. H. L. Paterson (President of the Sheffield Society of Architects) ; Mr. J. Herbert Pearson ; Mr. T. V. Phillips ; Mr. J. Henry Pitt ; Mr. W. T. Plume ; Mr. Harry Poole ; Mr. Andrew N. Prentice ; Mr. T. Taliesin Rees ; Mr. E. E. Richardson ; Mr. W. H. Robinson ; Mr. P. F. Rowell ; Mr. W. J. Rudderham ; Mr. Edwin J. Sadgrove ; Mr. H. A. Saul ; Mr. W. Gillbee Scott ; Sir Walter Schröder ; Mr. F. E. Sidney ; Mr. O. R. A. Simpkin ; Sir Sydney Skinner ; Mr. J. Alan Slater ; Mr. B. J. A. Smith ; Mr. M. J. H. Somaké ; Mr. P. J. Spencer ; Mr. Einar Skjold ; Major Charles F. Skipper ; Mr. C. D. Spragg ; Mr. W. P. Steel ; Mr. L. Sylvester Sullivan ; Mr. Michael Tapper ; Mr. Walter Tapper ; Mr. Sydney Tatchell ; Mr. Benjamin Taylor ; Sir A. Brumwell Thomas ; Mr. Percy Thomas, O.B.A. (President of the South Wales Institute of Architects) ; Mr. R. W. Thorp ; Mr. Harry Tilbury ; Captain B. S. Townroe ; Mr. E. H. Tranfield ; Mr. G. Mackenzie Trench ; Dr. Raymond Unwin ; Mr. Robert G. Vergette ; Mr. Francis T. Verity ; Mr. C. F. A. Voysey ; Mr. Thomas Wallis ; Sir Charles Walston ; Mr. Chas. F. Ward ; Mr. Edward Warren ; Mr. Maurice E. Webb ; Mr. W. H. Webber ; Mr. Herbert A. Welch ; Mr. John White ; Mr. Victor Wilkins ; Mr. P. J. Williams ; Mr. H. W. Wills; Mr. Geoffrey C. Wilson ; Mr. G. G. Winbourne ; Mr. E. E. Withers ; Mr. George E. Withers ; Mr. John Woollatt ; Mr. P. A. Gilbert Wood ; Mr. W. L. Wood ; Mr. Wm. Woodward ; Mr. E. W. Woolley ; Mr. F. R. Yerbury.

After the loyal toasts had been proposed by the President, VISCOUNT PEEL (First Commissioner of Works) proposing "The Royal Institute of British Architects and Allied Societies," said he had received the high honour of pledging the Royal Institute of British Architects and Allied Societies, although he had reached that critical time of life when he asked the question "Why do anything ?" He was not quite sure of the answer. Maybe they would want to know what interest the Government took in architecture, or rather what interest the Government ought to take in architecture. One reason for his presence might not be obvious to all of them : he had an interesting connection and natural sympathy with their President. He could not exactly say that in the Eastern Midlands they had been brought up on the self-same hill, because they were not overgrown with such excrescences in the Eastern Provinces, but they had been brought up on the self-same marsh not very far from the banks of the river Ouse, which great river did not run rapidly in its course down to the sea. They had further sympathies in common, inasmuch as the President of their great Insti-

tute was the first President who did not come from the serried concentrated ranks of London. As provincials they were glad that a provincial had burst through conventions and privileges, and fought his way to a prime place in the Institute. Continuing, Lord Peel said he desired to ask what was the connection between the Government and architecture. That the Government had shown its sense of the importance of architecture was shown by the inclusion in the last three or four Governments of a First Commissioner of Works in the Cabinet. They did not, however, know of any architects in the Cabinet : it was a deplorable omission. They had artists, literary men, and even poets, but the great art of architecture was not represented. He doubted if there were many, if any, architects in the House of Lords or the House of Commons. Perhaps architects were better employed. No one could attack the present or any other Government for being other than generous in its architectural tastes. The House of Commons carried on business under what he might call British Gothic ; the judicial limb of the Government undoubtedly had some connection with the French Gothic of the fourteenth century ; but their administrative offices were a very curious collection indeed. The Foreign and India Offices were done in a style which was due to the interference of politician with public works, which he thought was one of the most deplorable signs of a past age. He did not know whether a building should represent the spirit or the work carried on within. He might be wrong, but he did not consider anyone going round Government offices could deduce from the outward appearance what class of business was carried on within. Could they tell him what style the Admiralty building was in ? Who could tell from the buildings they were housed in what that tremendous triple conjunction of the Admiralty, the Army and the Air Force were actually doing inside ? The Treasury he could only describe as a rabbit warren ; a labyrinth formed, no doubt, to defend itself against the irritated taxpayer. Continuing, Lord Peel said he would like particularly to congratulate the Institute on two things : One of their distinguished members had recently been to America and carried off the Gold Medal of the American Architects. While we were paying thirty-four millions a year to that country it was a great honour that a distinguished Englishman should have taken something from them. The second point he wished to recall was that their President was a distinguished member of the Fine Arts Commission. It was a very great help and advantage to a Commissioner of Works to be able to refer some of the difficult questions of the day to their consideration. Every country got the Government and probably the architecture it deserved. Only last year he had been studying the architectural problems of America, and one of the main features he discovered was the dignity and even beauty of their industrial buildings. In England, however, they had lagged rather behind the times in regard to their industrial position. At last they were waking up to the fact and realised that industrial buildings need not be hideous and ugly, but could be dignified and beautiful. Architecture was a great democratic art, and maybe a solution of the problem would arrive when they became more sensitive to the dignity and force of great architecture. It would be through the inspiration of their great Institute that improvement and achievement would be obtained. In conclusion, Lord Peel gave the toast of " The Royal Institute of British Architects and the Allied Societies," coupled with the name of the President of the R.I.B.A. and Mr. Percy Thomas, President of the South Wales Institute of Architects.

Mr. J. ALFRED GOTCH (President), in responding, said : I thank you, Lord Peel, for the manner in which you have proposed this toast. You have referred to the fact that we were brought up on the self-same marsh, and on my part I should like to hold out a slimy hand of welcome, and congratulate the country on having so informed and enlightened a First Commissioner of Works. If by any extraordinary revolution of the wheel of fortune an architect should ever become a Member of the Cabinet, I hope it will not be the present President of the Royal Institute of British Architects, for I should regard with horror, and any architect would regard with horror, the responsibility of endeavouring to settle in what style all new buildings should be erected. I imagine that the domestic affairs of a corporate body such as ours, however closely they come home to ourselves, can be of little interest to the distinguished guests who honour us with their presence to-night ; and therefore, had the circumstances been normal, it would have been beside the mark to allude to them on this occasion. But since we met a year ago an event has occurred of great importance to ourselves and one which is not without its bearing on the public. I refer, of course, to the amalgamation of the Society of Architects with the Royal Institute.

This absorption, long desired, yet long delayed, has now been accomplished with a courtesy and goodwill that could not have been surpassed, and it will always be a source of gratification to myself that it took place when Plancus was Consul—if I may associate myself for a moment with that distinguished Roman.

The bearing of this event upon the public lies in the fact that the influence of the Royal Institute is now universal ; our body now includes practically every British architect who is of note in the world of architure. We are all working through the same agency for the same ends—the well-being of architects and the advancement of architecture. Lord Peel has referred to the fact that the public are taking an increasing interest in our art, and it is greatly to the public advantage that there should be a body of wide authority to guide them when they seek guidance, and to point them kindly, but firmly, in the right way when they don't.

Of all the arts, as you, my lord, have suggested, architecture comes most insistently and most intimately into the daily life of men and women ; and the great fact that men and women must grasp is that successful results in architecture can only be achieved by those who have been trained to produce them. Lawyers have something to say about the man who is his own lawyer —I will not mention the terse terms in which their opinion is expressed—but a corresponding want of judgment marks the untrained person who is his own architect. This is no new view ; for so long ago as the eighteenth century distinguished amateurs suffered from the gibes of their contemporaries, although the conditions of that period demanded far less knowledge of the art of planning

(for instance) than is necessary to meet modern requirements.

The whole world, therefore, being now alive, we may presume, to the fact that architecture can only be produced by architects, they will find in the Institute, or its members, the assistance for which they are seeking. For the Institute insists upon a good education for its members ; good, in the general sense of culture, and good in the particular matter of architectural design, a term which includes not only the appearance of a building, but its suitable planning and its constructional stability. During the last week or ten days an important step towards helping education has been taken by the allied societies, for they have promised to try and provide funds for the establishing of several maintenance scholarships. The Institute does more than attend to education, for public bodies, including the Government, can, and indeed do, seek its disinterested advice upon questions of architectural amenity, upon matters of gradually changing construction, upon the choice of suitable materials for such things (for example) as houses for the people. Further, if any person has the misfortune to fall into irreconcilable differences with another concerned in his building adventures, he can apply to the Institute for the appointment of an arbitrator ; or if a body of persons promote a competition for a new building, they can obtain the assistance of the Institute in the selection of an assessor.

These are some, and some only, of the many matters in which the Institute is able directly to help the public, and it gives its help in no spirit of self-seeking, but with a desire to obtain the best solutions of the various problems.

But it has other aims as well. Beyond its duties to the public, beyond those to its own members, lies its mission to advance the art of architecture itself, to foster refinement of taste and the spirit of scholarship. Architecture has its roots so deeply embedded in the past, that it is essential to lay the record of the past before the eyes of present votaries of the art. Keeping these records in mind, yet refusing to be enslaved by them, architects may stamp their work with a character at once novel and sane, not seeking a violent novelty at all costs, but achieving enough of it, through their recognition of present-day needs, to differentiate their work from that of any bygone period.

Architecture will hold its own, if for no other reason than because of its intimate association with the practical necessities of construction, which are intolerant of charlatanism. And it will hold its own so long as mankind is constrained to seek the shelter of walls and roofs. In the past, noble architecture has been either the ambition or the hobby of kings, great nobles and high ecclesiastics, of wealthy trading companies and civic authorities.

Civilisations blossom, flourish and decay, and their monuments, ruined by tempest or the wrath of man, yet still preserving relics of their ancient grandeur, are swallowed by the earth, only to be revealed in later ages by such excavations as we see recorded in the daily Press, and when they are revealed they bear eloquent testimony to the love of architecture inherent in all noble minds.

Architecture of more homely kind has been the pride and product of less exalted people than these ancient kings—of squires, merchants, lawyers, and even of speculating builders ; and this, not because these men aimed at producing architecture, but because they wanted to do their building decently and in order, according to traditional methods, and without endeavouring to save the last possible penny in the process.

The days of palaces and great mansions seem to be passing away They exceed in size the needs of our times, they exceed in cost the limits of our purses, from which the State extracts so large a portion of their contents. But if private ambition is checked, the way is still open to public bodies and great trading concerns to indulge in that ambition for fine building which they must possess, even if they are unaware of it or keep it in subjection, an ambition which they share with the great potentates of the past. If this is borne in mind and this natural instinct is gratified, England may yet vie with ancient Rome in her splendour. Let the public supply the money and the Institute will supply the men.

Mr. PERCY THOMAS (President of the South Wales Institute of Architects) also responded and said, having to follow the President made his task more difficult. With regard to the amalgamation, it had been welcomed by all ranks of the Institute. It was, he thought, nowhere more appreciated than in the provinces, where the members of the Society of Architects helped the local societies to carry out, too, the matters of the Institute. Not only would the Royal Institute gain considerably by the inclusion of these architects, but the smaller societies in the provinces would benefit from the amalgamation. Lord Peel had referred to the intention of the Government to keep up the standard of architecture, and they in Wales felt particularly gratified by the recent action of the Board of Education to that end. In a communication which had been sent to all local authorities great stress had been laid upon the necessity for good and beautiful architecture in building, and for a consideration of æsthetics. Coming from such a source, it was impossible to overlook the importance of such a plan. They had been struggling for such recognition for years past. The members of the smaller societies had felt they had not obtained that recognition to which they were entitled. Concluding, Mr. Thomas thanked the President for his kind reference to the Allied Societies.

LORD SUMNER, on proposing " The Arts," asked What was an artist ? It had occurred to him that the only way to answer the question was by the Socratic method —to ask a number of questions. He had written them down for this reason : There was a minor art, unworthy of being included in The Arts, which was the art of dialectic, or argument, and the secret of that art was wisely to choose your axioms, to proceed rapidly and unexpectedly to conclusions drawn from these axioms, and to know the precise moment when to beg the question. That was the true secret of political reasoning. An artist, proceeded Lord Sumner, was one who created beauty by the outward expression of his inmost self through a medium which he had selected. What followed from that ? First of all, by the very definition, an artist was a monstrous egotist. He wished to express his inmost

self and stamp himself on the world. It followed that his greatest pleasure was to do so, and, when once in a hundred years, like the blossoming aloe, he had achieved that object, the time had come for him to pass away. Another thing followed from that. The artist's sole pleasure was in the creation of beauty. Beauty when created was the property of no one ; it belonged to the world, it was the artist's gift to his fellow men. The opposite of it was utility. In proportion as an artist made anything useful he ceased to be an artist. But that which was the property of the world ought not to be sold for a great or even a small price ; it was like pure air or pure water, and on the other hand it was only that which was useful which mankind could reasonably be called upon to pay for. It followed that if an artist should sink to such a depth as to sell his work he was ceasing to be an artist : he was entering the ranks of a profession. Lord Sumner said that at this point he thought he had better begin again. Art was the presentation of the ideal by the manifestation of the impossible. It was a product of poetic illusion from prosaic material ; it was the achievement of subjective reality in the objective garb of plastic constructive materials. He rather thought that covered the ground until he came across another aphorism : " Art is the subject on which all mankind talks the utmost bosh." What was the democratic view of art ? He thought it was summed up in this proposition : " Art is what gives me pleasure ; great art is what gives me great pleasure. Provided I enjoy it, it does not matter whether it gives other fellows pain or not." That was why the cubist, futurist, or vorticist painter was so truly democratic. The agony he inflicted on those who were rash enough to cast an eye over his deathless works was pleasure to him. There were similar successes in architecture. He had seen in the press a large number of most interesting pictures of houses that were being built in this country to make homes for heroes. All appeared to him to have one great element of utility that they enabled tenants to get houses at a rent which could never by any possibility pay the owners of them, but there were some of them he was grieved to say which appeared to have been built for blinded heroes—and which it would be inhuman to call upon anybody else to occupy. Joking apart, was it not true to say that the arts were a civilised nation's pride ? The arts, however they might understand or misunderstand them, were things, each in its different way, to which all of them sent out their hearts. They were the salt of life ; they were things without which they would rather die—and without the arts the nation would die.

Sir FRANK DICKSEE, P.R.A., responding, said he agreed that the masses of the people were taking more interest in architecture and building generally, and he thought as time went on they would take an even greater interest.

Sir LIONEL EARLE, Permanent Secretary of the Office of Works, who also replied to the toast, said that while in America, he had been greatly struck by the beauty of some of the buildings and the excellence of the architecture generally. He had gone into the reasons for it, and had come to the conclusion that primarily the high standard of their architecture was due to the fact that from the very outset architects were trained from a constructional point of view and were made to give special attention to questions of material. That method was not followed in this country, and he regretted it. If it had been, there could not be, he thought, the great divergence of expert opinion in regard to St. Paul's and Waterloo Bridge. He had been immensely impressed with the work of the Fine Arts Commission in America ; and during the one year it had been at work in this country it had done an amazing amount of good work, not only in London, but in the country as well, and he hoped provincial bodies would seek their advice more and more. In Washington, which he considered the second finest city in the world, the Fine Arts Commission had only nominal powers, but woe betide the man in the Middle West who did not obey their wishes. With regard to the question of the Royal Institute itself, he knew that for a long time it had been felt it was imperfectly housed. The Government at the present moment was unable to satisfy those aspirations. It was possible, however, at no very distant date, that if certain schemes of the Government matured, it might be possible to give effect to their wishes. He considered that for such an important body as the Royal Institute, dealing with fundamental questions in art, that the Government should do everything to meet their wishes.

Major HARRY BARNES, in proposing "The Guests," said they were honoured that night by the presence of three High Commissioners—South Africa, Australia and India. They rejoiced in the fact of being not only a national but an Imperial Institute. He would assure them that nothing could be more delightful to them than the great welcome which the Prince of Wales was receiving from the great Dominions. They heard of great architectural achievements in the Dominions, of the great new cities of Canberra and Delhi. They all had their individual interests, but in the Institute they were united in furthering the great work of architectural education, because they realised that architecture could only flourish in an educated community. They were honoured that night by the presence of the presidents and secretaries of other great institutions. They would be glad to see the time come when they would be brought into closer co-operation, so that the youths of this country might have the opportunity, at a critical period of their education, of deciding whether they would be architects or engineers. They had been reminded that night that they were not only associated with the great arts and professions, but also partners in one of the greatest industries—the building industry. The fact that their guests included members of the building trade, employers and operatives, might cause Lord Sumner to take a different view as to their remuneration. They were not only engaged in a great art, but in a great utilitarian work. One of the great features of last year was not only the amalgamation, but the fact of the Joint Conciliation Board of the National Federation of Master Builders on matters affecting the building industry. Everyone who welcomed that Board would welcome one between the architects and the National Federation of Building Trade Operatives. He would suggest that the building industry was three-legged, and the absence of any one leg would bring it to the ground.

LORD RIDDELL, who responded, said Sir Lionel Earle had spoken about American architecture ; he (Lord Riddell) considered that some of the buildings erected by members of the Institute would compare with any buildings in America or elsewhere. It was not wise always to run down their own country and make invidious comparisons.

Mr. R. C. NORMAN (L.C.C.), who also responded, said if he did not speak of Waterloo Bridge, they would think he was afraid. He could, however, only speak for himself, being only one out of a body comprising 140 members. He hoped he was in agreement with a good many, and also with their Vice-President. Before he finally made up his mind, he attended a lecture on London Bridges, by Major Barnes, at the London Society. When he first approached the subject he had done so with the most biassed views possible. In his youth he had desired to become an architect, and Norman Shaw had agreed to take him into his office ; but he had been carried away into other walks of life. He would reiterate that he had approached the subject of Waterloo Bridge in a biassed attitude of mind, together with a desire to do all he could to secure its preservation. The offence of which the L.C.C. had been guilty in the eyes of many people, was this : Having consulted what they considered to be the best technical advisers they could find on an exceedingly difficult question, they decided to accept their advice and abide by it. He admitted no experts were infallible—they might be wrong—but what was the test of infallibility ? It would surely never be found in the architectural profession. No one could pick out a genius at will. Having decided, rightly or wrongly, they had two courses open. Either that the bridge came down and they built a new one, as like it in form as possible, or that they used the best architectural talent and endeavoured to replace it by a bridge which would not only be more suitable for modern requirements, but would also, they hoped, be a worthy successor to Rennie's masterpiece. They decided for the latter course. They might be wrong ; but even so, it was no ignoble choice. It was a decision on which the architectural profession had not pronounced an authoritative opinion, although he believed he knew what the opinion of any body of architects would have been in any other day. Of course, it might be possible they would have to consider another alternative. It might be shown, although it had not yet been done, that the experts were wrong, and that the bridge could be retained. If it could be shown that the bridge could be maintained, there were other requirements which had to be considered, much as he would like to keep it. The problem necessitated the consideration of three things : road space, the requirements of to-day, and the limitation of finance. He would assure them that any constructive proposals based upon a new consideration of those three facts would be received with the greatest respect. In conclusion, Mr. Norman thanked them for their attention to such a highly controversial matter, the solution of which could not be found in a controversial spirit. No task he had ever undertaken had been so distasteful to him as the outcome of the present problem.

MEXICAN AND SOUTH AMERICAN PERIODICALS.

The October number of *El Arquitecto*, the journal of " La Sociedad de Arquitectos Mexicanos," publishes a very interesting account, with drawings and photographs, of that wonderful building known as " La Iglesia de la Santisima Trinidad " in the City of Mexico. The front elevation of this church, which was started in 1755 and finished in 1786, consists of a tower on the S.W. corner of the building and a buttress on the N.W. corner with a beautifully decorated " screen-wall " between, in the centre of which is the principal entrance. Owing to the bad subsoil and the little or no precaution taken by the architect against settlement, the " screen-wall " has sunk below the ground to the extent of about 9 feet, burying the bases of the pilasters below the earth, while the N.W. buttress and the tower have *not* sunk to so great an extent ! This can be clearly seen by a careful study of the two photographs on pages 26 and 27, and it is actually suggested by Señor A. Muñoz, G., the architect who has carried out the excavations and investigations, that the central window over the doorway was originally square, *while now it is oblong !* This church, which is still standing, is probably the only example in the world of a building which has withstood such a curious settlement.

Another article by the architect A. Muñoz, G., is a severe criticism of the new National Theatre in Mexico City, complete with plans, sections and elevations.

The April number of *La Revista de Arquitectura*, the journal of " La Sociedad Central de Arquitectos " (Buenos Aires), gives some good photographs of modern architecture in the Argentine, the premiated design of Señores Vaneri, Igón, and Lemos for the Italian Club, together with some students' drawings.

In the February number of *El Arquitecto* (Buenos Aires) is published a long article entitled " What is Architecture and What is Engineering ? " This rather vexed question now seems to have been handed over to the New World for discussion, and probably it will be settled there and we shall benefit by the decision.

FRANK H. WAPLE [*L.*].

" ARCHITECTURE."

Architecture, the monthly periodical of the Society of the Architects, filled a gap in modern architectural literature : it was pleasant in its quarto format, well illustrated, and its list of writers contained many distinguished names not familiar as writers on architectural or cognate subjects. With the amalgamation of the Society and the Royal Institute, *Architecture* has passed into the hands of the proprietors of *The Builder*, and the first number, which has been issued this week, shows a change in the outward form and increased contents of interesting articles by well known writers, including Mr. J. Alfred Gotch, Professor Lethaby, Professor Richardson, Mr. Dudley Harbron, Mr. H. B. Creswell, Professor Reilly, Mr. Martin S. Briggs and many others. The journal is well printed on good paper, the illustrations admirably reproduced, and the price at a shilling exceptionally moderate, all indicating a promising career to *Architecture* in its new form.

Heraldry and Architecture*

By WALTER H. GODFREY, F.S.A.

IN introducing to you the subject of Heraldry in its relation to architecture I shall not detain you long with any close examination of the origins of this ancient and beautiful mystery. That it is a mystery in the modern as well as the old sense, is quite clear from the puzzled attitude of the man in the street when confronted with a shield of arms, and from his hopelessness when he sees its blazon in print. If we architects have to complain that the pleasing conventions of the styles in which we work convey next to nothing of their significance to the general public, what must be the bitterness of the misunderstood and even ridiculed herald? His language is a foreign one, his system of marshalling arms is a hidden secret, and his symbols are strange and unfamiliar to all but the initiate. Most people do not even attempt to understand these things, and if they own what they call a "crest"—a name they apply indiscriminately to all heraldic emblems—they are quite content to enjoy the reflected and mysterious glory which it confers by means of its strange and inscrutable character.

Students of heraldry know, of course, that nine-tenths of the camouflage with which the eighteenth and nineteenth century heralds surrounded their art had no justification—and indeed no serious precedent—and tended only to degrade it and to bring it into derision. The early custom of adopting a personal badge or cognisance, which, displayed on the shield and helm, marked the rank of the wearer, grew into a delicious art, which in its best period was fanciful and humorous but always simple and easy to be understood. There need be nothing mysterious about heraldry. Symbols form a language which a child can seize, bright colour attracts the eye in an instant, and the usage which gave to our armigerous families their proud insignia was appropriately marked with a directness and lucidity that inspired the artist and enabled him to produce designs of unquestioned beauty.

The jargon of the later heralds is as alien to heraldry as the appalling efforts of the nineteenth century commercial draughtsmen who attempted to work in a field for which they were entirely unfitted. The leopards of England were not only obscured under the misleading description of "lions passant guardant," but were drawn to imitate the once fashionable French poodles which never could be trained to fulfil their heraldic functions—that is to fill and decorate a shield. The charges on new shields of arms granted by the Heralds' College were as complicated and utterly unsuited for heraldic presentation as it was possible to make them, and were described in terms which exactly matched the sententious rubbish of their design. When we read Froissart or walk the aisles of Westminster Abbey, we meet things clear and gay, shaped as they were named with all the consummate skill of a classic simplicity. In Lord Berners' translation of Froissart we read of one, that he bore a shield silver, 5 roses gules, of another that he showed a pennon of his arms of silver, a cross sable, anchored, called in armoury the iron of a mill-stone. We learn that the Bishop of Norwich made to be borne before him the arms of the Church, the banner of St. Peter, 2 keys silver, like soldiers of Pope Urban, and in his pennon he bore his own arms, silver and azure quarterly, a fret of gold on the azure, a bend of gules on the silver, and because he was the youngest of the Spensers he bore a border of gules for a difference.

Heraldry was the poetry of an age that in the sober practical task of building overcame all the great constructional difficulties that it encountered, and turned stone and timber alike into a fairyland of art. Try as we will, we cannot fathom the miracle of the Middle Ages, for it is beyond our powers to comprehend that wonderful conspiracy of high and low alike to spend themselves in devising and perfecting an endless succession of things of sheer beauty. We are little enough aware of the potent influence that this tradition of mediæval craftsmanship must still exert upon our modern neo-classical times.

There is one pre-eminently important fact for the artist and craftsman that emerges from a study of the early practice of heraldry, and that is that we have every right to the freedom, in design and treatment, enjoyed by those who worked in the heyday of this wonderful art. The ignorant person (and he is not infrequently the armigerous one) is hypnotised by the idea that heraldry is hedged about with strict rules. I have had instructions to follow implicitly to the smallest detail some poorly conceived drawing or some seal or stationer's die because of the supposed sacrosanct character attaching to what has been received as an authoritative version of the arms. No variation, so I was solemnly assured, could be permitted in the anatomy, attitude or proportions of a ridiculous version of a supposed heraldic lion, for Authority had made it so. Of course, the absolute reverse of this is the real position. The character of the shield is limited only by the blazon, and the artist should have full liberty to design the shield in his own way. The variations in the size of a chief or a border, the proportions of a cheveron, the particular treatment of animal and other charges, as long as there is no doubt of their identity, all are entirely at the discretion of the artist. The only

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limitation is the descriptive blazon which should not be varied without good and sufficient reason. I shall have something to say, later on, regarding the freedom which we ought to possess to utilise the beautiful methods of heraldry for modern requirements, but, apart altogether from the wider application of the idea, we must stand boldly for our rightful liberty as artists to interpret heraldry in the form that most appeals to us.

The very wide use of heraldry in European buildings from the later mediæval period to the present day prompts us to make some enquiry into its function in architectural design. The occasion for its introduction was a definite and practical desire to establish a personal link between the owner or builder and the structure which owed its erection to him. With his arms he set his seal on the walls, and in them posterity had an easy clue to his identity. There is, I believe, plenty of good precedent for Lord Grimthorpe's choice in having his likeness carved in one of the angel heads in the west porch of St. Alban's Abbey. But how ambiguous, uncertain and frivolous a method compared with the open and dignified setting of his arms ! The comparison gives us some measure of the great part which the invention of heraldry has played in hedging round with security and dignity the location of the individual, which with nothing to aid it is so quickly lost in Time's obscurity. Yet important as heraldry is in this practical matter of rescuing men's identity from oblivion, it does not necessarily draw therefrom an æsthetic value, although it obviously provides an opportunity. And heraldry, I like to think, is the accident in design, the point at which the designer, emulating the oyster, shapes his jewel. We all agree—we have all learned by hard experience—that the charm of a building lies essentially in its proportions and scale, the adjustment of its mass to its voids, in the coherence of its modelling. These matters form the major condition of good design to which is added the minor condition that the detail should have enough of subtlety to express and resolve its character into a full harmony. A little while ago, before the public had been taken in hand by the Architecture Club and let into our secrets at Grosvenor House, it would have been proper to proceed to ornament after structure. And heraldry is certainly ornament *par excellence*. But at the present time it is not fashionable to talk of ornament ; in fact, the " penny plain and twopence coloured " doctrine is a thing of the Victorian past. Yet we are as human as ever, we love the playthings of art as much and even more than we admire its higher ideals ; and if as a tribute to a scientific age we like to consider these things in their functional aspect and pretend to be serious when in very truth we are as frivolous as our forebears, we need not quarrel with a fairly wholesome pose in spite of the suspicion it carries of self-deception.

We may all, however, subscribe to the dictum that ornament is better when it has significance than when it has none. Enrichment that means something, that carries with it its own *raison d'être*, is not long in finding a functional excuse, and by its very nature it adds immensely to the articulate character of a building. And how often the designer finds the need for some incident to focus the attention, some point of interest to emphasise a feature or redress a balance ! Heraldry has no rival in this capacity. It has its own fully developed, decorative equipment. It has form, modelling, colour—qualities capable of the most varied and delightful elaboration. It has, moreover, a character of surprise and unexpectedness which attracts and intrigues the attention, it seems always to have something new to offer us. It is kaleidoscopic, but its mutability is ordered, restrained, and true to type.

One of the great advantages of heraldry considered as architectural ornament is its adaptability. It can be made as aloof or as intimate as the designer wishes in his architectural scheme. The completeness of its own apparatus allows it to be used as a separate or applied feature with no particular reference to the architectural detail, as when a boldly carved heraldic achievement stands alone in the centre of an otherwise plain wall. Like a piece of sculpture in the round, it has sufficient architectural quality to stand as an isolated feature and to take its part in the main grouping of the building. On the other hand, heraldic motives, groups of shields or badges can be woven into the very texture of the architecture. They lend themselves equally to all styles and modes ; they add piquancy to ornament but need never disturb its rhythm or repose. This adaptable character is largely the outcome of the variety in the methods of presenting heraldry. The shield of arms itself is, as we have seen, the simplest thing in the world and can be as conspicuous or modest as we desire. The actual shape of the shield is for the artist to determine. He may use the acutely pointed, slightly convex shape of the thirteenth century, or the fanciful outlines which came later when the shield was often ridged or furrowed. Roundles, oblongs (concave or convex), and the many beautiful Italian types are open to him, and of course the lozenge for a woman's arms. The garter and other insignia, where borne, may surround the shield, or a wreath, as in much of the sixteenth century heraldic glass. But the chief variation is obtained by placing the arms within an elaborate escutcheon of architectural design, which, starting with the strap-ornamented roundels of the Elizabethan period, soon developed into the scroll-bordered cartouche of the full renaissance.

Then, over and above the simple use of the shield of arms, is the full achievement with helm and crest, mantling and supporters. It was in full keeping with the naïve joyousness of heraldic pomp and ceremony

that the shield of arms should be surmounted by the helmet with its crest, and that even the scarf which the crusading knights wore attached to their heads to save them from the heat of the sun should be brought into service as a gay mantling to complete the artist's scheme. Heraldic art was plastic and unconfined in the spacious days of its birth, and for many years it added to its delightful conventions without hesitation. When the makers of seals found that the shields with their crested helms did not fill the whole circle, they put heraldic beasts on either side, and so another feature, the supporters, came to be added to a full achievement of arms. When the Italian artists employed by Wolsey and by Henry VIII. at Hampton Court designed those beautiful panels of arms in terra cotta they indulged their native preference for draped or undraped infant figures in place of the usual supporters, and youthful amorini appear similarly on the tomb of Henry VII. By another departure from strict rule—a departure full of appropriate significance—a bishop impaled his arms with those of his see, and both bishops and cardinals, being in theory unwarlike persons, substituted the mitre and the cardinal's hat for the crested helm of the soldier. These variations show a healthy freedom of design, and if the arts had retained until these latter days the vigour and independence of the Middle Ages and the first charm of the Renaissance we might still be witnessing a steady growth, instead of spending our energies to arrest their decay.

It may seem to you unduly pessimistic, in this period of an undoubted revival of the arts, to speak of our main occupation as the arrest of their decay. And yet it surely is still true that the pleasure with which we meet the work of the many genuine artists of our time is swamped by a feeling of despair at the general absence of any response on the part of public taste. There is one craft in which the art of heraldry, ever since its inception, has gone hand in hand with architecture, and that noble partnership has been reinforced by consummate skill in the lettering of inscriptions. I refer to the craft to-day too often unhappily practised by the monumental mason. For many years now a number of architects and sculptors have pointed the way to better things, and have striven to defeat the nefarious enterprise of the importer and merchant of Italian marble monuments. With what result ? With the timely help of our Diocesan Committees the interiors of our churches do show some signs of improvement, but our cemeteries and graveyards are still being desecrated by the importation of ready-made monstrosities. The ancient personal significance and beauty of the memorial is gone, the traffic in headstones is soulless and untouched by art, and our only hope—the small band of skilful working masons—is almost becoming extinct. I may be wrong, but I am one of those who think that you cannot introduce a sense of beauty into national life from above—indeed, the flower of art will not blossom freely until it is well nourished by being planted in the soil of a general inclination towards, and a desire for, a genuine and cultivated craftsmanship. The same decadence is still to be observed among our so-called heraldic stationers, our printers, our sign-writers. The few who have reverted to finer models, and who show some ability for invention on sound lines, only serve to show up the ordinary public taste in a stronger light. We have yet a long way to go before we can begin to hope that the stigma of indifference and blindness to beauty will be removed.

We need not wonder that in present-day conditions the majority of people regard heraldry as dead, that they show little interest in one of the most human arts that man has ever conceived in a joyous hour. And yet how easy it is to show that the essence of heraldry is as alive to-day as ever it was ! The mystery is that men and women have lost touch with the means of expression of emotions which they nevertheless feel as readily as ever their ancestors did. In heraldry we have a clear example of the danger which attends the imprisonment of any form within fixed barriers to the discouragement of a natural development. It is as though, the children that we are, we have been forbidden to play with this toy, and so have been content for it to remain on the shelf unheeded. But it is far too good and too useful a conception to be allowed to die from desuetude. When we raise our public buildings and monuments we still desire to commemorate the great names of the past, and how can we do it better than by carving again their arms, or the delightful badges and merchants' marks that formed a fascinating by-product of mediæval heraldry ? There are still amongst us people who are not ashamed to show pride in ancestry and to recall their family alliances in the quarterings of their shields. There are also the numerous classes of our public arms, those of our cities, boroughs, colleges and universities, our inns of court and ancient livery companies and the countless associations which should have their arms, their seal or badge. If some of the modern emblems are hopelessly inappropriate for a heraldic purpose, at least there is time to reform them, and we have seen that even the London County Council can adopt a good design when the right influences are brought to bear. The democratic aptitude for indecision is fortunately being expended on nothing more serious than a motto. Another form of public arms is to be seen in ecclesiastical heraldry which, Mr. Dorling has shown us, might be much more widely developed than at present. Beside the arms of monasteries, which contained some of the most beautiful designs, and those of bishoprics, which include a number not altogether con-

spicuous for charm, the Church possessed in the past a great array of sacred emblems, the signs of the Evangelists, the emblems of the Passion, the sacred monograms, and the arms and emblems of the saints. Each little device is a symbol full of meaning, embodying in a perfect form the heart of a sacred story, forming the shrine of some precious lesson or some cherished memory in the history of the faith. Our ancient churches are full of these beautiful things ; we meet them carved in stone, inlaid in flint panels, worked into glorious painted glass, cut in bench ends, pulpits, screens and fonts, filling the architecture with a texture of parable and story. This art ministers to the imagination and provides an atmosphere of deep devotion. It has an advantage over the realism of a sculptured or painted scene, which, like modern scenery in a theatre, leaves little for the all-important powers of visualisation of the mind. And with it all, it adapts itself readily, at every point, to the decorative uses of architecture and the crafts.

There is another wide field for the application of the heraldic idea at the present time, and it is allied in a curiously close manner with the occasion for the beginning of heraldry. In recent years, and especially during the late war, we must all have been impressed by the enormous number of emblems connected with the fighting services, the Navy, Army and Air Force. There are the crests and badges of warships of all classes, and of the regiments of the Regular Army and of Territorial and Yeomanry units. There are the badges of rank of the three services and numerous symbols, marking various duties assigned to individuals. There are wound stripes, service cheverons and oak-leaves for mention in despatches, also a great number of divisional signs, and badges for separate expeditions, army corps, etc. The regimental colours and the parti-coloured ribbons of medals for campaigns and acts of gallantry form another large group of military emblems. In these innumerable bits of ribbon, metal and gold lace, we have a mass of heraldic material, which seems to me to prove the persistence of this sign language even in days when the world is supposed to have left behind it its first childhood. But are we not largely neglecting all this opportunity ?

It was bound to happen that these naval and military symbols should show a great diversity in the quality of their design, but the necessity for their rapid recognition in the field has stamped most of them with the simple vivid character which the heraldic method exemplifies so well. Regimental and other badges have been used with excellent effect by many designers of memorials, and it is satisfactory to see that the Admiralty is interesting itself in improving the design of the ships' crests. But my own view is that we have not yet made enough use of all this rich material to our hand, nor have we seen that here is a chance of encouraging an art to grow from a multitude of significant forms, known and cherished by the whole nation.

Some years ago, at the conclusion of the war, I braved the criticism of my orthodox friends and suggested a scheme for the commemoration of individual war service which should bring all the military insignia into play. On a shield formed of a pattern of the medal ribbons I arranged the badges of rank, the cheverons, wound stripes and oak-leaves, and the divisional and other signs associated with the service of each man. When the shield was ensigned with the regimental cap badge as crest, or the ship's crest, it gave a graphic and eloquent *précis* of his service. I soon found, of course, that there were certain vital differences between this exercise of mine and the coats-of-arms of heraldry proper, and that there could be no identity between the two. I had to formulate certain new rules and employ certain conventions, but in the fascinating task of working out more than 500 individual records on these shields of honour I have been amazed at the possibilities of the notion. The variations are unending, and no two shields need be alike. I mention this here, only to support my plea that we should let heraldry teach us to use all symbols as a great art-language and to carry the heraldic tradition into wider channels. Some antiquaries may fear for the integrity of an ancient and noble art, but I would say to these that heraldry has suffered more from the heralds than from any unofficial artist, and in regard to my experiment in " service shields " I may perhaps be allowed to say that it won the warm approval of Sir William St. John Hope. Just before his death he wrote me a letter endorsing its main lines and describing it as a welcome essay in living heraldry.

And after all, why should we be denied the use of any material appropriate to our art ? In the fifteenth and sixteenth centuries, badges, merchants' marks and monograms were used as freely as actual coats-of-arms for heraldic decoration, and if our work rests on some definite contemporary usage it will have a very much greater value in times to come. And there is a sign of the times that should encourage us to cast our net widely to-day. There is happily among artists, and among the section of the public that is seeking better things, a desire to introduce more colour into decoration. The old bad habits of deep self-colouring and of neutral tints are disappearing, and a freshness and variety of bright colours are taking possession. It was as hopeless to introduce heraldry into an atmosphere of Venetian blinds and Nottingham curtains as into the rooms whose walls vaunted a deep red flock paper and the paintwork was combed into a respectable imitation of oak. One marvels that even a bowl of flowers was able to survive the depression of such surroundings. To-day people are beginning to understand the need of an atmosphere of freshness and light, where colour can deliver its bright message without an effort and heraldry may be at home again.

I have referred to the extraordinary facility with which heraldic forms can be adapted to every kind of

building. This does not mean that every piece of architecture can stand an excess of this particular species of enrichment, but it does give us a wide choice of features and the possibility of an infinite variation in its application to buildings of the same class. A detailed account of heraldry in its relation to architecture would require a review of its use in all these features. For instance, in a country house we may set upon the gate piers a heraldic beast supporting an armorial shield, or the arms may be carved on the piers themselves or may mingle in the wrought iron work of the gate. The entrance doorway furnishes us with unnumbered methods of incorporating the arms, or an achievement may adorn the wall above the door, the gable or pediment, and its motives may be cut upon the chimney shafts, or cast with beautiful effect upon the gutters or the heads of rainwater pipes. Within the house the newels of the stair may carry beasts or shields or both, fine heraldic achievements may fill the composition of the overmantel, friezes and ceilings may reproduce them in delicate plaster modelling, the glazing of the windows may show their colours to perfection. In Holland House cartouches with arms are set with fine effect in the angles of walls and ceilings, armorial fire-backs and andirons are delightful features; lock-plates, sconces and all types of furniture can be the chosen vehicles for heraldic display.

This is a bare recital of the opportunities for the display of heraldry in domestic architecture, but we can all illustrate it from our recollection of beautiful English homes that grew in the magic atmosphere before Industrialism clouded our island sky. Every type of craftsmanship can be brought into play—the work of the mason, the carpenter, the plasterer, that of the worker in glass, in lead, in wrought iron, and the painter and the gilder give the finishing touch to each excursion of fancy. In the house one finely executed piece of heraldry gives a character of distinction and turns the impersonal fabric into a page of human story, and here a certain reticence increases the effect. But in our churches and our public buildings it is seldom necessary to restrain our hand. On their walls, in their windows we look for the historical symbol, and the enrichments that link us with the past and make significant the present. In their fittings we expect the ornament to speak to us ; in them, as well as in the memorials of the dead, we are affected by everything that binds the architecture to the lives of men.

The ancient heralds have put in our hands an instrument at once simple and at the same time capable of infinite elaboration, which will give expression to our human desire for emblems that defy mortality and that join in intelligible sequence the events and personalities of the nation and the race.

Before showing you a few examples drawn at random from the great treasure-house of heraldic art, I should like to say just a word or two upon the question of technique. I shall not presume to lay down any laws for the artist and craftsman, for my belief is that when we have steeped ourselves in the proper atmosphere of this art we should bring to our interpretation of its form and its colouring the whole of the creative powers of the individual in the free exercise of our various abilities. I should like, however, to endorse the wise words of Mr. Dorling, to whose knowledge and skill we all owe so much, in his excellent little work on the heraldry of the Church. In answer to the question, " What are the elements of the beauty of ancient heraldic design ? " he says : " I think they are three : first, cleanness and firmness of line ; secondly, balance and proportion ; and lastly, splendour of colour." These are the outstanding qualities required in heraldic presentation. And it is noticeable that Mr. Dorling does not refer his remarks to any particular style, although he looks to the thirteenth and fourteenth centuries as providing the classic models for us to-day.

In a careful study of this and kindred subjects I am more than ever convinced that each one of the various schools of art, and styles of architecture, enshrines a veritable discovery, or if you will, a creative principle separate from the rest. That is to say that each style constitutes a mode, a harmony of treatment, which is complete and independent in itself and forms a definite contribution to the æsthetic capital of mankind. But I also feel just as certainly that there are some qualities, even some forms, that transcend the boundaries of style and may be common to them all. How often one sees in the crisp and clean-cut carving of some of our thirteenth century capitals a reflection of an almost Hellenic quality, and even in the best medieval figure sculpture some such subtle relationship has been recognised by our critical writers. In the same way there is a touch of finality, of character with a universal application, to be perceived in the earlier heraldic drawing. It is, of course, quite easy to emphasise the medieval flavour in designing heraldry, to over-emphasise it as the Germans are fond of doing, but the sacrifice of fine quality is always greater than the gain in the picturesque. If, on the other hand, you place some perfect medieval rendering of the lilies of France against the arms of the Florentine Guilds by De la Robbia or the emblems of Louis XII and Francis I, at Blois, you will see a common art quality of the highest order, due no doubt, if we could analyse it, to certain constant laws that govern successful carving in low relief. If, then, we add together the contribution that heraldry makes—how it brings a world of human significance into ornament, how it calls forth the greatest qualities in modelling and design, and the occasion it offers for splendid colour—we can scarcely pay it too high a tribute for the service it renders to the great and all-embracing art which the architect is called upon to practise.

The Selection of a Building Stone

BY PROFESSOR A. P. LAURIE

There is no more difficult problem for the architect to-day than the selection of a building stone to suit modern conditions, which are due to the pollution of the atmosphere by the sulphur acids formed during the burning of coal. As I have shown in a recent paper, this pollution extends to-day to remote regions in this country far from large centres of population, though, of course, it occurs in a concentrated form in large cities.

Necessarily the selection of a building stone is of the nature of a compromise, cost and, therefore, carriage being an important consideration, and the architect is therefore confined of necessity to a choice among the best of available stones.

The recognised tests for stone which are usually given in text books, and published by owners of quarries, are of little assistance.

The crushing strength of a stone is seldom of importance as the loads carried in ordinary buildings do not approach the limiting point of safety, and when a load concentrated on a single line or point is to be feared, the danger is avoided by special methods of construction.

The water absorption test is also of doubtful value, some very porous stones having a remarkably high value as resisting chemical attack, the rate of absorption and evaporation yielding much more valuable information. The chemical analysis is of more value, but requires interpretation, and standing alone will not in many cases enable us to select a stone. Microscopic examination, from which in many cases valuable information can be obtained, is seldom undertaken, and in many cases much more research is required before a safe interpretation can be put on such an examination.

While the variety of stones is infinite, for practical purposes, we can divide them roughly into two great groups, limestones and sandstones, the limestones being composed principally of carbonate of lime or calcite, and the sandstones of grains of quartz bound together by some cementing material.

I am leaving out of discussion special building stones like granite, confining myself to the ordinary commercial building stones.

The limestones are composed of a material which is readily attacked by sulphur acid, with the formation of sulphate of lime crystals which break up the stone. The choice of a limestone is, therefore, the choice of a stone which on the whole will best resist this inevitable decay. I shall discuss this more at length later on.

In the case of a sandstone, the quartz particles in themselves are practically indestructible and, therefore, the question of importance is the nature of the binding material holding them together.

The ideal binding material is silica, of which quartz is a variety, the famous Craigleith Stone of which so much of old Edinburgh is built, being for this reason an ideal building stone.

Many other binding materials are to be found in sandstones, but the most usual is calcite, and we have every grade of stone, from a pure silicious sandstone to a calciferous sandstone, ending in silicious limestones. We also find sandstones in which the binding material is of the nature of a clay, or compounds of iron or a felspar cement, and different varieties of silicious cement are also known.

The first step to be taken by the architect is the selection of such stones as are available from an economic standpoint, and having selected them he can get a great deal of information by a study of their behaviour in existing buildings, especially within the area in which he proposes to build.

It is remarkable how often a wrong selection is made for public buildings. Edinburgh is a conspicuous example. Many public buildings put up in the last 30 years are rapidly decaying, while miles and miles of streets of houses put up by the speculative builder are in excellent condition.

A rough selection having been made in this way I find that the most useful information can be obtained for the architect by a chemical analysis, along with an exposure of samples to concentrated acid fumes, and a determination in some cases of the rate of absorption of water and of evaporation. The chemical analysis is essential to enable the result of exposure to acid fumes to be correctly interpreted and to select a standard stone for comparison. It would obviously be absurd for instance, to compare a limestone with a silicious sandstone. The analysis along with the acid fumes test enable us to get valuable practical information. Its value in the case of sandstones is obvious, but not so obvious in the case of limestones. But experiments with limestones reveal the fact that they vary remarkably in their resistance to acid fumes, and therefore a test of this nature gives valuable information. To take an example, the Oolitic limestone of which Lincoln Cathedral is built shows an unusually high resistance to acid fumes, much higher than the best Portland stone.

The rate of evaporation and absorption of water is also of importance, the evidence being in favour of the view that a stone which rapidly absorbs and evaporates tends to automatically wash itself free of

much of the crystalline sulphate of lime, which will, if left in, break up the stone.

Rapid evaporation is directly related to a low total absorption of water, and therefore the low total absorption of water is of importance, if properly understood, but taken alone without the other tests is of little value.

Everything of course is relative: it is a question of selecting the best among the possible stones available, but this being accepted the tests described above will yield the architect valuable practical information.

It must also be noted that stones from the same quarry vary in their resistance, from point to point. Tests should, therefore, be made on more than one sample taken from different parts of the bed. The final results of the tests can be compared with a standard stone, such as a silicious sandstone, or, in the case of limestones, with Portland stone from the best bed.

Annual Convention of the American Institute of Architects

PROFESSOR BERESFORD PITE'S IMPRESSIONS

The 58th Annual Convention of the American Institute of Architects was held in New York from 20 to 24 April. Professor Beresford Pite, who represented the Institute at the Convention, referred to his visit in a speech after Mr. Topham Forrest's Paper on "The Architectural Development of American Cities" on Monday night. In the course of his speech Professor Pite said: I would like to say that I came back from America very greatly impressed with the high standard of American civil architecture architecturally. It attains in the artistic world undoubtedly the right to the description of a very high type of building; indeed, the beauty, the scholarship, the character of the architectural treatments of the best buildings in the best parts of New York, I venture to say, excel our own standards here. I might go further and say it shows a life, an earnestness and completeness which, I think, is unrivalled, even on the Continent. I should like, most emphatically, to pay the highest tribute one can to the distinct architectural quality of the civil architecture of America. Of course, the railway stations, of which we had a somewhat inadequate view, are very fine indeed, and I think the great Central Station of New York is equally deserving of attention with the Pennsylvanian Station. The Lincoln Memorial, this and the new Art Gallery at Washington, by Mr. Cret, attain a standard of scholarship, refinement, and beauty that I am sure every one of us will be anxious to recognise most cordially.

With regard to the Convention of the American Institute of Architects, which I had the honour of attending with Dr. Unwin, and which was the occasion of the presentation of their Gold Medal to Sir Edwin Lutyens, it is worthy of remark as being a very great Convention indeed, attended by hundreds of architects. There was a daily luncheon; indeed the Convention had its headquarters at an hotel, and the attendance varied from 600 to 1,200. On the middle day of the week there was a request made that architects should close their offices so that the assistants could come to the luncheon, and 1,200 sat down. I mention these figures to give an idea of the scale of the Convention, architects coming from all parts of America to show their enthusiasm for fellowship and their interest in their Institute. At the same time there was the City Planners' Convention going on in another centre, and that also was very largely attended, the attendance there being over 500. And on more than one occasion there was a joint session of the two bodies. The Architects' Convention had created a remarkably interesting exhibition, in which medals were awarded. I had the honour of being on the jury. The Shelton Hotel, New York, was singled out as the best building of its class, and a medal was awarded to Mr. Harmon, the architect. On the great night of the feast, the last night, when the Medal was presented to Sir Edwin Lutyens, the scene almost baffled description. There were all the accompaniments of a great occasion: the music, the solemn procession of members of the Institute, arrayed in many-coloured gowns, headed by a banner, and the proceedings were conducted with the greatest dignity and state. Mr. Davis, who was the American Ambassador here, spoke of Sir Edwin Lutyens' work with great feeling and warmth as he knew it in England; and we may be assured that their appreciation of our distinguished colleague's work was very genuine and was based upon a complete knowledge of it and affection for him. I may say that their affection and esteem for Dr. Unwin and his work here was manifested in a very splendid way; and, generally, the effect of intercourse with England on their part, and on our limited part with them, was of the most helpful and delightful character.

The nature of American hospitality has been referred to as if it might have unduly influenced Mr. Forrest's view. I can only say it was overwhelming in its kindness and devotion; the busiest architects seemed to have nothing to do when they were at the service of their visitors.

With regard to the work of the Convention, I might refer to the meetings and the exhibitions and the daily discussions that went on every morning, and were very largely attended, and to an interesting volume of reports. I will read you only the headings of some. There is a

Report of a Committee on Contracts, which suggested, among other things, a contract between the architect and his employer. There is a Report of a Committee on Public Works, which deals with the proposed expenditure of 150,000,000 dollars by the State on public buildings on which architects are advising. A Report on a great architectural building for exhibition purposes. An interesting Report on Education, in which it is the education of the public, more than that of the profession, that they are concerned with. There is notice of the publication of an important book, on the significance of the Fine Arts, the use of which is increasing among colleges, etc.; the Institute are considering further publications of that sort for the education of the public. There is a Report on public information of a most interesting and important character. There is one on the radio distribution of architectural news, and among the humorous asides at a luncheon was the information that McKim, Mead and White, since the introduction of radio into their office, had increased the production of eggs and darts so that the draughtsmen were able to lay four eggs to the bar! There is also a Report on Scientific Research, and there is, finally, a very long and valuable Report on Community Planning, dealing with subjects such as Mr. Forrest has been speaking on to-night. I hope this long and important document will come into the possession of the Institute. It is exceedingly well written, and the sub-tone of it is entirely that England is the ideal. The methods of the London County Council are cited with approval; sincere regret is shown at the grid-iron plan, and there is some discussion on the question of the sky-scraper and its harmful effect on the whole question of traffic. The lighting of apartment buildings in cities is discussed almost in a spirit of pessimism; and it is evident that the difficulties which have been created by land speculation and the rise in value owing to the presence of high buildings has brought about a position of very great difficulty, which is dealt with almost plaintively in this Report. The concluding phrase is extraordinarily interesting to us here: "We cannot go into all the possibilities that await architecture," and so forth, concluding after indicating methods, "By doing this architecture will not continue to bloom merely in the crevices unoccupied by business, it will spread over the whole field of American life, and in Professor Lethaby's fine words 'will create form in civilisation.'" This will show you the way in which our brethren in America still look to us for guidance and help in the maintenance of English ideals.

I do not know that time permits me to enlarge on the subject, but the interest of the visit to New York, followed by a visit to Washington, and by one to Boston, has been very great. I would extend commendation to their domestic architecture, in Baltimore, in districts of Cambridge and the Bronx, New York. In the laying out of their modern estates, the artistic treatment of their smaller houses is encouraging, delightful, and most charming. The circumstances, the material, and the sites are different, but it is evident the modern school of American architecture has attained a very high general standard, which must fill us with admiration and emulation.

The Late Viscount Leverhulme [*Hon. F.*]

BY PROFESSOR C. H. REILLY

With a man of the late Lord Leverhulme's immense activity one may be pretty sure that in writing about one small side of it—his interest in architecture and architectural education—one is only covering, and that inadequately, a portion of the field. If, however, building in the literal sense of the term was a hobby with him rather than a main activity, it was one in which he displayed distinctly Napoleonic characteristics. Like that restless emperor, he loved to conceive great schemes for the improvement of cities, or to have them presented to him, and like Napoleon too, roadmaking, broad and straight when the land allowed it, was one of his private pleasures. The Wirral peninsula between the Mersey and the Dee is intersected to-day with the great tree-lined roads that he made, which, if not fully appreciated at the moment by the local authorities, will one day be an invaluable asset of that rapidly growing suburban area. Indeed, town planning as we have begun to understand it was the development of architecture which pleased him most. In the days, some twenty years ago, when he allowed me to go to him at week-ends with new schemes for such trifles as moving the University of Liverpool from one end of the town to the other, or for making a new approach to it by cutting a road through a densely populated area, it was always the big idea rather than the individual units which interested him. So it came about quite naturally that his first definite gift to that university was the founding of the Chair of Civic Design—the first town planning professorship in England. This happened when Mr. John Burns was promoting his Town Planning Act of Parliament. Lord Leverhulme saw very clearly that town planning in England might very well degenerate into an affair merely of hygiene and engineering unless the subject could be attached in the public mind to architecture. To him it was mainly architecture on a big scale. I remember writing to him one night from the University Club, that the best way to direct the mind of the public to this aspect was to found a department of town planning in the Liverpool School of Architecture, and by return of post the matter was practically settled. This brought Professor Adshead to Liverpool, and, when London University followed suit, left Professor Abercrombie as his successor. Between these two a vast deal of actual town planning has been carried out, but, better still, the ideas they have promulgated are now public property. It was, however, Lord Leverhulme's benefaction that was the kernel from which the plant grew. No one now, not even the most official city engineer or surveyor, considers the subject one without its architectural implications. That this is the case is mainly due to Lord Leverhulme's timely benefaction to the Liverpool School of Architecture.

The great gift, however, which founded the Department of Civic Design in the Liverpool School, together with its journal, *The Town Planning Review*, does not measure all Lord Leverhulme did for that school. For several years he housed it rent free in the beautiful old Queen Anne buildings of the Blue Coat Hospital. These he bought in order to save for Liverpool its oldest and one of its pleasantest buildings. However, he did not in his generosity tie the school to this building. He offered the University to pay for a new building and site for the school, should it prefer a building nearer to the rest. Somewhat unwisely, perhaps, as the event proved, the University chose the latter alternative, for with the war intervening and the rise in prices, the new school building has not yet been erected. Even this did not exhaust his liberality, however. He founded in both departments of the school the Lever prizes of £25 a year. They were to be devoted to schemes for improving the town, prepared first by town planning students, and then developed by the architectural students.

I have mentioned these gifts to the Liverpool School, because they prove Lord Leverhulme's interest in architectural education. All the world knows the pioneer work he did at Port Sunlight in making one of the earliest industrial villages, and in employing some of the best architects of the day in building its cottages and institutions. From Port Sunlight his building activity spread over the world. When he opened the exhibition of the Liverpool School two years ago, he said he had started his building work by making a rabbit hutch as a boy, and he was ending it by laying out and building, mostly in Africa, some seventeen towns. In all this work one may say with perfect honesty, that, whatever the result, he himself always desired not only the most practical, but at the same time the most humane solution and did his best to achieve it.

Obituary

O. C. WYLSON [*F.*].

Mr. Oswald Cane Wylson, F.R.I.B.A., died on the 28th April. Mr. Wylson, who was in his 67th year, was the son of Mr. James Wylson, a London architect. He was educated at King's College School, London, and served his apprenticeship to the late Mr. Arthur Cates. He studied at the Royal Academy and won the Donaldson Silver Medal in Fine Art and Construction at University College. Mr. Wylson's professional work was mainly concerned with the designing of important theatres and other entertainment buildings and restaurants. He took an active part in public life, and served for many years on the Strand Board of Guardians, acting as Chairman of the Building Committee and representative of the Board on the Metropolitan Asylums Board. During the war he was Hon. Deputy Chief Surveyor of the British Fire Prevention Committee in relation to the prevention of fires in hospitals and camps, and he also sat on the Concrete Research Committee. Amongst his principal works were the Winter Gardens, Blackpool, the Regent Theatre, and numerous cinemas and variety theatres in London.

ARCHITECTURE CLUB DINNER.

By Charles Marriott.

It was a good idea to make "Waterloo Bridge and its Designer, John Rennie," the toast of the evening at the eighth dinner of the Architecture Club at the Hotel Cecil on Friday, May 15. By this means Waterloo Bridge was brought into public discussion on its own merits and not merely as a subject of controversy. On its own merits full justice was done to the bridge by the various speakers; Professor Reilly, Mr. Cruttwell, and Mr. Dalrymple-Hay, in particular, giving us interesting information about John Rennie, his personality and work in general. As regards the suspended fate of the bridge, some very pertinent and useful remarks were made both by Mr. J. C. Squire, the Chairman, and the Duke of Atholl, who, as the principal guest, proposed the toast of the evening. What they said cleared up the situation wonderfully in the minds of their hearers. They made it plain that Waterloo Bridge was being made the scapegoat for shirking—whatever the reason, whether financial or otherwise—the general traffic problem of London. The points driven home were, first, that it is extremely doubtful whether a new and wider bridge at the same point would materially relieve the traffic; second, that there is no substantial evidence that Waterloo Bridge cannot be preserved in its present form.

These two speeches confirmed and formulated, at any rate in the mind of one hearer, the belief that if Waterloo Bridge is destroyed it will be destroyed on two assumptions: (*a*) that a wider bridge at the same point would solve the traffic problem; (*b*) that the preservation of Waterloo Bridge in its present form is beyond the powers of English engineering. Without being an expert on either traffic or engineering, it is reasonable to doubt if either of these assumptions is well founded. Further, the conviction grows that if the London County Council had been in a position to proceed with a bridge at Charing Cross nothing whatever would have been heard about either the necessity for a wider bridge at Wellington Street or the impossibility of preserving the present Waterloo Bridge. That, for financial reasons, the London County Council may not be in such a position does not affect the argument. What it means—to adopt the comparison of a subsequent speaker—is that Waterloo Bridge is "in the dock," if not on a false charge, at any rate on quite inadequate circumstantial evidence in order to avoid the trouble and expense of tackling a serious weakness in the traffic organisation of London.

Sir Frank Dicksee, P.R.A., who supported the toast, spoke chiefly of the æsthetic merits of Waterloo Bridge, but threw out the suggestion that the London County Council were bent on running tramways across the river at that point and would sacrifice Waterloo Bridge to them, and also asserted his conviction that if English engineers were unequal to the task of its preservation, American, French or Italian engineers were not. The two eminent engineers, Mr. E. Cruttwell and Mr. Harley H. Dalrymple-Hay, who followed, were naturally at some disadvantage in having to express without technical details expert opinion at variance with that of their colleagues who had advised the Council; but they made it clear that, in their considered opinion, the bridge could be saved; Mr. Dalrymple-Hay going so far as to say that he was, at the moment and within a few hundred yards of that place, associated with an engineering task in comparison with which the preservation of Waterloo Bridge would be an easy one. Incidentally, Professor Reilly performed a useful service in his frank admission that any entertainment by the defenders of Waterloo Bridge of the possibility that it might be widened had been a mistake. It is of the first importance that the arguments for the preservation of the Bridge should be practical and æsthetic, and not sentimental. In proposing and responding to the toast of "Architecture and the Press," Lord Lee of Fareham and Mr. John Walter, of *The Times*, exchanged some engaging banter. Lord Lee described his dingy experiences on a visit to the editorial office of *The Times;* Mr. Walter countered neatly by saying that Lord Lee must have lost his way and penetrated into "purlieus" not intended for visitors.

THE PALACE OF ARTS, WEMBLEY.

By Professor S. D. Adshead.

The exhibition of paintings at Wembley affords, as it should do, a unique opportunity for examining a collection of masterpieces that have been borrowed from our provincial and private collections, and of comparing the work of past generations with work that is being produced to-day.

There are to be seen in the Palace of Fine Arts examples of some of the lesser known works of the great eighteenth century portrait painters, Hogarth, Gainsborough, Romney, Reynolds, Zoffany, and the rest; of the English school of landscape painters, Wilson, Turner, Crome, Constable and Cox; of the early Victorians, the mid-Victorians, the pre-Raphaelites and of the late Victorians, Millais, Leighton, and the rest.

These old schools can well be compared both as regards choice of subject, technique and manner of convention with recently executed and very modern examples, extremist and otherwise.

Of past masters that are of particular interest, I would direct attention to some outstanding examples of the pre-Raphaelite school. Here may be seen, side by side, the works of those two very similar and extraordinary painters, Ford Madox Brown and Holman Hunt. In the "Hireling Shepherd" the purely representative qualities of Holman Hunt are contrasted with the brilliant patch conventions of Ford Madox Brown. The latter is the greater colourist. He is also more human, and escapes more easily from the morbid side of a strong sentimentalism, which had always an overpowering effect on the exponents of this school.

Interesting comparisons may also be made between Clarkson, Stanfield and Pyne; and in the gallery devoted to portraits of Empire builders we see Millais' "Disraeli," Sargent's "Joseph Chamberlain," Gainsborough's "George Canning," and George Romney's "Warren Hastings," side by side.

A most interesting gallery is that which contains a collection of paintings of English life. Zoffany is here shown to advantage, and although he is not generally regarded as one of the greatest of eighteenth century portrait painters, he shews that he excelled as a colourist and was unique as a painter in his period, in the way in which he placed his figures amidst charmingly designed surroundings.

Amongst the moderns, let us now turn to the water colour room. No medium so well represents the limpid effects of sun and storm.

"The Pavilion de Musique, Versailles," by W. G. de Glehn, A.R.A., is convincing in this respect. It reminds us of the work of Sargent, though the pink and blue grouping of figures in the foreground is, if we may make such a comparison, as a delicious sweet rather than wholesome food. The drawing by C. S. Cheston, "Chudleigh and Dartmoor," is a delicate essay in soft sunlight flitting amidst trees and mountains over a wide landscape.

Amongst the modern painters are examples of the works of almost every school. We will select three, which illustrate as well as any in the exhibition the tendencies of the extremists. Each is a fantasy, a dream of painting, depicting the soul rather than the flesh. "The Sea," by Paul Nash, is typical. With a few strokes of his brush, a contrast of lines, and a strange though consciously produced discord of colour, he vividly depicts the unrelenting sweep of waves against the hard embankment of the engineer. The hard line of its coping, the cold wet feeling in the air, and the rhythmic movement of the waves produce a sense of resistance to the elemental forces of nature and a feeling of desolation which only such an art as that of Paul Nash could well portray.

Another equally characteristic and yet quite different picture is "Outside the Pawnshop." Nothing could be more horrible and yet more convincing than this presentation of the brutality of modern industrial conditions. The cubist treatment of line in faces, bodies and limbs seems to express the tragedy and crude conditions of huddled humanity where curves in facial expression and a softening of the emotions is little seen.

In another vein, perhaps less crude, though more insidious, is "The Betrayal," by Stanley Spencer—a modern interpretation of the most dramatic of all crimes enacted amidst a sinister accompaniment of horrible buildings. A gruesome figure with mouth agape and listless eyes watches the horrible tragedy from a place of vantage in the coping of a wall. He leans against a building of corrugated iron. The wall, with its rounded red brick coping and white brick string, typifies everything that is vulgar in the suburbs of our industrial towns. We need say no more, but finally, let us consider the place of pictures such as these. What are they? What is their object? Where are they leading us to?

The art of these painters is direct, its analysis is pungent, and whether they give us a vivid dissection of some aspect of modern social conditions, a picture of some elemental force in nature, or a character study of man, this much may be said for it—it is an abstract art, it is strong and healthy in its methods, and it is as far removed from photographic representation as is the sound of music from the aerial noises of a Morse code.

But let us cease ruminating on "extremist art," and let us enter the chapel. Here we see a new altar-piece by Colin Gill. It will probably be considered to have failed as a religious subject, and, no doubt, that is so. "They that go down to the sea in ships" is not, after all, a text that takes one very far without a context, and Mr. Colin Gill's context is a fine group of early Victorian emigrants of the well-to-do and middle class, who look rather like the sort of people that one might have found crossing the Channel during the latter end of last century in the Dover packet. Incidentally, there is the dove, representative of the Holy Ghost in the heavens—but this looks like an afterthought.

But give the picture another name—hang it in a suitable setting, wipe out the dove, and we have one of the most beautiful paintings of modern times. All that really matters is there. There are some beautiful figures. Especially fascinating is the attitude of the young woman on the right looking up. The young boy, and the lady who is presumably his mother in the centre, are magnificently drawn. The only really technical fault in the painting is the treatment of its centre. There is too much of a gap and the dropping of the line of the waves to give interest makes matters worse instead of better. But these and its misapplication as a religious subject are very small matters. It is really a great painting, beautiful in drawing and colour, and must rank as one of the finest wall paintings of modern times.

ARCHITECT'S CLAIM FOR PROFESSIONAL FEES.

Abbot *v.* Richmond.

Mr. Justice Sankey recently heard a case brought by Mr. Ernest Abbot (L.R.I.B.A.), an architect, against Mrs. Tilly Richman, whereby the plaintiff claimed £275 7s. for professional work done.

The defendant was desirous of building a factory in Mare Street, Hackney, on a site owned by the London County Council, and instructed, through her agent, the plaintiff to prepare plans and obtain estimates; his claim therefore was made up of two-thirds of 4 per cent. on the lowest estimate obtained (£4,918), £157 6s., extra work £29 8s., and quantity surveyor's fees £88 13s.

After hearing arguments his lordship gave judgment in favour of plaintiff for the full amount claimed with costs, and a stay of execution was refused.

W. E. Watson [*F.*]

Allied Societies

SHEFFIELD, SOUTH YORKSHIRE AND DISTRICT SOCIETY OF ARCHITECTS AND SURVEYORS.

The Annual General Meeting of this Society was held in the General Lecture Room at the University, Sheffield, on Thursday, 23 April.

The election of Officers for session 1925-26 resulted as follows:

President, Mr. H. L. Paterson, F.R.I.B.A.
Vice-President, Mr. F. E. P. Edwards, F.R.I.B.A.
Hon. Treasurer, Mr. J. R. Wigfull, F.R.I.B.A.
Hon. Secretary, Mr. H. B. S. Gibbs, A.R.I.B.A.
Council : Mr. E. M. Gibbs, F.R.I.B.A. ; Mr. W. C. Fenton, F.R.I.B.A. ; Mr. W. J. Hale, F.R.I.B.A. Mr. A. F. Watson, F.R.I.B.A. ; Mr. C. B. Flockton, F.R.I.B.A. ; Mr. W. G. Buck, Lic. R.I.B.A. ; Mr. J. A. Teather, Lic. R.I.B.A. ; Mr. H. I. Potter, A.R.I.B.A. ; Mr. E. M. Holmes, F.S.I., B.Eng. ; Mr. A. Whitaker ; Mr. H. Webster ; Mr. J. M. Jenkinson, A.R.I.B.A. ; Mr. J. C. P. Toothill, A.R.I.B.A. ; Mr. F. H. Wrench, A.M.I.C.E., Lic. R.I.B.A.

SOUTH WALES INSTITUTE OF ARCHITECTS.

Annual Dinner of the Eastern Branch.

The fourth annual dinner of the Eastern Branch of the South Wales Institute of Architects was held on 24 April at Newport, the President (Mr. C. F. Ward) in the chair. Among those present were : Mr. Percy Thomas [*F.*], Vice-President S.W.I.A. ; Mr. Ivor Jones [*A.*], Honorary Secretary of the S.W.I.A. ; Colonel E. H. Fawckner, R.E. [*F.*] ; Mr. F. Swash [*F.*] ; Mr. C. E. Tebbs [*A.*] ; Mr. F. Parfitt (President Newport Master Builders' Association) ; Mr. R. Hayman [*L.*] ; Mr. Cyril Bates [*A.*] ; Mr. D. I. Lewis [*F.*] ; Mr. Horace Jones [*L.*], Honorary Secretary of the Eastern Branch.

The Chairman having given the toast of the King, submitted that of the "R.I.B.A. and Allied Societies." The Society was an ancient one. Much progress had been made of recent years, and members had been admitted from the provinces as well as from London. The result was that the Institute had now representation throughout the country. The Institute were doing their best to improve the status of architects, and were really effecting an excellent work. The result of their efforts had been that the public could now depend upon it that if they employed a chartered architect they would be certain of able and efficient service. The South Wales Institute had progressed greatly under the presidency of Mr. Ivor Jones, and later under Mr. Percy Thomas. The latter had done excellent work in connection with the amalgamation of the Royal Institute and the Society of Architects. This had much strengthened the profession.

Mr. Percy Thomas, in responding, said that he had now had four years' experience of the Council of the Institute, and had found that they were a most democratic body. Excellent work had been done by the Institute's Board of Education. They were now engaged upon a scheme which would have a great influence upon the profession. They considered that the small prizes offered by the individual societies were never really effective, and they therefore proposed a scheme by which every society should contribute to a central fund. By this they hoped to secure £600 a year, out of which they would grant six scholarships of £100 a year each. Referring to the new Registration Bill, the speaker said it was purposely made wide so as to include all classes of architects, as they were advised that their only hope of getting it through was to draft it in this way. The result must be that architects of the future would benefit more than architects of the present. He hoped they would make this sacrifice.

BERKS, BUCKS AND OXON ARCHITECTURAL ASSOCIATION.

The Annual General Meeting of the Berks, Bucks and Oxon Architectural Association was held at Oxford in the Hall of Oriel College, by permission of the Provost and Fellows, on Saturday afternoon, 25 April, the President, Mr. E. P. Warren, F.S.A., F.R.I.B.A., in the chair.

The Annual Report, which was adopted, among other business records an Exhibition of Prize Drawings, the result of two Competitions for Students, and the third Annual Banquet of the Association ; it refers feelingly to the death of Mr. Paul Waterhouse, Past President of the R.I.B.A., and a Vice-President of the Association, and expresses gratitude to Mr. Edward Warren, the retiring President, for his valuable and energetic guidance of the Association from its inception in 1921.

The Treasurer's statement of accounts showing a satisfactory balance and disclosing the fact that the Year Book has again been published without financial loss, was adopted. The membership of the Association is reported as 145.

The retiring President in his address mentioned the Conference of British Architects at Oxford when the local Association was provileged to act as hosts, and briefly reviewed the four years of the Association's existence and work. He referred to Architectual Education and the opportunity for Oxford University to take its part in this important field.

After paying a well-deserved tribute to the work and enthusiasm of Mr. Harry Hutt, F.R.I.B.A., Secretary from 1921, who was about to resign that office, he thanked the members for their friendly support accorded during four years, and extended a welcome to his successor.

The following officers were then duly proposed and elected : President : Mr. H. S. Rogers, M.A., F.S.A. [*F.*] ; Vice-Presidents : Mr. E. J. Dixon [*F.*], Bucks ; Mr Harry Hutt, [*F.*], Berks ; Mr. G. T. Gardner, Licentiate, Oxon ; Hon. Vice-President : Mr. E. P. Warren, F.S.A., [*F.*] ; Hon. Treasurer : Mr. T. T. Cumming [*F.*] ; Hon. Secretary : Mr. R. F. Dodd [*A.*] ; Hon. Auditor : Mr. R. A. Rix [*A.*].

The following elected by the Branch Societies complete the Council :—Berks : Messrs. E. P. Warren, F. G. Sainsbury, H. W. Rising, W. R. Howell, F. H. Floyd, G. T. Saunders, C. B. Willcocks ; Oxon : Messrs. T. Rayson and N. W. Harrison ; Bucks : Messrs. A. Cooper and G. H. Williams. Mr. H. S. Rogers was invested with the Presidential Badge by Mr. Warren and gave a brief address in which he thanked members for the honour of his election.

The President handed the prizes for a design of a Market Hall in a small town to Mr. G. Batten and Mr. J. C. H. Bawcutt.

LIVERPOOL ARCHITECTURAL SOCIETY (INCORPORATED).

Qualification for Associate Members.

The following resolution was carried at the Annual General Meeting of the Liverpool Architectural Society held on Tuesday, 21 April 1925.

As to Article 6 :

> "That every candidate for admission as an Associate must, as a preliminary to election, pass one or more of the examinations of the Royal Institute of British Architects or such other Institution or Authority as may be recognised by the Council. Provided that in special circumstances the Council in the exercise of their discretion may dispense with such examination or examinations."

REPORT OF THE LONDON BUILDING ACTS COMMITTEE FOR 1924–1925.

This Committee has continued its work of considering the necessary amendments of the London Building Acts. The Report of the Committee as approved by the Council was forwarded to the Clerk and Superintending Architect of the London County Council with the suggestion that a conference of all interested parties would be called if the London County Council would welcome the detailed amendments of the Acts necessary to give effect to the proposals set forth in the Report.

The matter has been standing over owing to the recent elections of the London County Council. It is probable that it will now be advanced.

The Committee was authorised by the Council of the Institute to send delegates to a Conference called by the Master Builders' Association on the amendments of the London Building Acts. The Institute's proposals were finally adopted with but a few modifications, and these have further been ratified by the Surveyors' Institute and House Builders' Association, which bodies had also sent delegates to the Conference.

The Committee has given very careful consideration to the question of the present rules for metal frame construction, which are somewhat out of date and demand revision. A report of the subject has been prepared and will be in readiness for reference as soon as the subject of the amendment of the law is taken in hand.

The Committee has also had to give special attention to new draft regulations for reinforced concrete regulations, which are being introduced by the London County Council. Any such regulations must by law be submitted to this Institute. These new draft rules are found to be far more complicated than the previous ones, and include a great many contentious matters. The Committee drafted a Report on the subject for submission to the Council of the Institute.

The Council, on the invitation of the Institution of Civil Engineers, has agreed to send two representatives to act on behalf of the Institute at a joint Conference to deal with these regulations and have given the Committee authority to appoint these representatives. The Chairman and Hon. Secretary have been appointed by the Committee for this purpose.

During the year Messrs. Campbell Jones, Leonard Elkington and W. H. White were co-opted.

Mr. Searles-Wood has continued to act as Chairman and Mr. Charles A. Daubney as Hon. Secretary.

Eleven meetings have been held. The attendances at the meetings have been as follows :—

Daubney : Chas. A. (Hon. Secretary) ..	9
Davidge : W. R.	2
Dawson : Matt	5
Elkington : G. Leonard	5
Hunt : W. G.	10
Jones : W. Campbell	5
Joseph : Delissa	7
Keen : Arthur	1
Searles-Wood : H. D. (Chairman) ..	10
Solomon : Digby L.	7
Tanner : Sir Henry	9
White : W. Henry	7

C. A. Daubney,
Hon. Secretary of the Committee.

ARCHITECTS' BENEVOLENT SOCIETY.

The Annual General Meeting of the Architects' Benevolent Society was held in the rooms of the Institute on Wednesday, 13 May, the President, Mr. J. Alfred Gotch, in the chair. Those present included Mr. C. H. Brodie, Mr. Walter Dewes, Mr. H. P. Burke Downing, Mr. William Gilbert, Mr. Osborn C. Hills, Mr. Albert E. Kingwell, Mr. D. Ivor Lewis, Mr. Henry Lovegrove, Mr. H. D. Searles-Wood, Mr. Digby L. Solomon, Mr. Maurice E. Webb, Mr. W. Hilton Nash (Honorary Treasurer), Sir Charles Nicholson (Honorary Secretary), and Miss E. H. Mann (Secretary).

The Annual Report was read as follows :

The Council have the pleasure to submit their seventy-fifth Annual Report. The number of applicants for relief has increased during the year, seventy-nine cases having been assisted with grants, as compared with seventy in 1923. In addition, two new pensioners have been added to the pension list to fill vacancies caused by death. £1,826 6s. has been distributed in the form of grants and £440 in pensions, making a total of £2,266 6s. An attempt has been made to increase the amount granted in cases of severe distress ; two applicants have received grants of £50 each, and three £40. One architect who had been helped several times in previous years by the Society sent a cheque for £75 to repay the amounts which had been granted to him, and entered himself as an annual subscriber.

Subscriptions received during the year amount to £1,106 7s. 7d.; but, though this sum compares favourably with the total of subscriptions received last year, it has not proved adequate to meet the increased number of applications, and the income account shows a deficit of £67 0s. 5d. The sum of £1,655 17s. 8d. received in donations is added to the capital account, and in accordance with the bye-laws of the Society, is invested in trust securities.

The Council hope that with the increased membership of the Royal Institute of British Architects due to its amalgamation with the Society of Architects, the membership of the Benevolent Society will also be increased, and many new donors and subscribers added to its list:

The Society's scheme of life assurance which was started in 1923 was enlarged during the past year to include all other classes of insurance, and a committee was appointed of specialists in various forms of insurance to give advice on all insurance questions as they arise. A booklet giving particulars of the revised scheme was sent out in September to all members of the Royal Institute of British Architects, the Society of Architects and the Architectural Association. It elicited a number of inquiries. Many policies for life, fire, motor cars, and buildings in course of erection have been negotiated directly through the Society, and a number of existing insurances have been transferred to its agency. Over £80,000 has passed through the agency of the Society in the course of the year, and a net profit of £70 has been handed back to the fund.

The Council have the pleasure to nominate Mr. Thomas Dinwiddy as Vice-President of the Society, and wish to record their gratitude to him for his generosity to the Society during the year. In addition to a donation of ten guineas, Mr. Dinwiddy has founded two new annuities from a capital of £500 cash in the one case and £500 bearer bonds in the other, to be known respectively as the Second and Third Dinwiddy Annuities. In this connection it may be recalled that the First Dinwiddy Annuity was founded in 1919.

Other donations which have been received include : £100 from the Building Trades Exhibition, through Mr. H. Greville Montgomery ; £100 from a donor who wishes to remain anonymous ; £15 15s. from Mr. Arthur Keen ; £10 2s. 5d. from the R.I.B.A. Defence League, through Mr. Sydney Perks ; £7 from the Licentiates' Association, through Mr. S. G. Short ; and £5 5s. each from the following : Sir John Simpson, Mr. H. W. Coussens, Mr. W. T. Jones, Mr. Henry Lovegrove, Mr. G. Bennett Mitchell, Mr. Arthur G. Morrice and Mr. Digby L. Solomon. £20 has been received in respect of the fourth instalment of Miss Raggett's legacy.

The Council report with great regret that the Society has lost many valuable supporters during the year. Three past Presidents of the Royal Institute of British Architects and of the Society have died during the past twelve months : Sir William Emerson, Mr. Thomas Collcutt and Mr. Paul Waterhouse, all of whom took an active interest in the Society. Sir William Emerson had been a trustee for many years, and Mr. Waterhouse had recently been elected to that office. The Council have also to report the death of Sir Thomas Jackson, another benefactor of the Society, Mr. J. W. Cockrill, Mr. E. P. Cook, Mr. G. Corderoy, Mr. F. G. L. Harris and Mrs. A. Jones.

The five senior members of the Council retire by rotation—viz., Mr. William Grellier, Mr. Osborn C. Hills, Mr. George Hubbard, Mr. L. S. Sullivan and Mr. A. Saxon Snell.

To fill the vancancies caused by these retirements the Council have the pleasure to nominate Mr. E. C. P. Monson, Major H. C. Corlette, Mr. Edward J. Partridge, Mr. A. H. Moberley and Mr. H. D. Searles-Wood.

The Council have the pleasure to acknowledge their great indebtedness to the Royal Institute of British Architects for the use of office accommodation and to Mr. MacAlister and the staff of the Institute for courteous help on all occasions.

The President, in moving the adoption of the Annual Report, referred in general terms to the good work of the Society. He complimented the Society on the progress of its insurance scheme, which he considered had made a promising beginning, and he hoped that as time went on architects would more and more insure through its agency.

The Honorary Treasurer announced that the Council of the Society of Architects had, prior to the liquidation of the Society, sent the Architects' Benevolent Society a cheque for five hundred guineas, to be invested and the income applied for the benefit of the Benevolent Fund, so that it might not suffer financial loss through the dissolution of the Society of Architects and the consequent cessation of the Society's subscription. Mr. Nash also called the attention of subscribers and donors to the generosity of Mr. Thomas Dinwiddy, who had in the course of the past year donated a thousand pounds to the Society for the purpose of founding two Dinwiddy annuities. He expressed the gratitude of the Society to Mr. Dinwiddy for his munificence, and he referred sympathetically to the distressing circumstances of one of the newly appointed Dinwiddy annuitants, who had previously been in actual want of food,

The Council for the ensuing year was elected as follows : President : The President of the R.I.B.A.; Vice-President : Mr. Thomas Dinwiddy ; Members : Mr. H. L. Anderson, Mr. Albert E. Kingwell, Mr. W. Campbell Jones, Mr. C. H. Brodie, Mr. Digby L. Solomon, Mr. W. Henry White, Mr. Maurice E. Webb, Mr. E. C. P. Monson, Major H. C. Corlette, Mr. Edward J. Partridge, Mr. A. H. Moberley, Mr. H. D. Searles-Wood, Mr. R. Dircks, Mr. E. Stanley Hall (representing the Architectural Association) and Mr. Henry Lovegrove (representing the London Society.

Mr. W. Hilton Nash (Honorary Treasurer) and Sir Charles Nicholson (Honorary Secretary) were thanked for their services to the Society and re-elected in their respective offices ; and Mr. Lovegrove and Mr. Brodie were re-elected Honorary Auditors.

A.B.S. SCHEME OF PROFESSIONAL INSURANCE.

Insurance to-day is a very complicated business and too much care cannot be exercised in the choice of an insurance company and of a policy. If, however, architects consult the Insurance Committee of the Architects' Benevolent Society, they are sure of obtaining competent guidance in all insurance matters. Especially favourable terms are secured by the Society, and every insurance negotiated through its agency results in a direct contribution to the Benevolent Fund. Enquiries should be addressed to the Secretary, A.B.S., 9 Conduit Street, W

NOTES FROM THE MINUTES OF THE COUNCIL MEETING

4 *May* 1925.

The Bartlett School of Architecture, University of London.

The Report of the R.I.B.A. Visiting Board on the Bartlett School of Architecture was approved and ordered to be communicated to those concerned.

Durham Castle.

A grant of £100 was made in aid of the fund for the preservation of Durham Castle.

Registration.

On the recommendation of the Registration Committee it was decided to circularise the members of the R.I.B.A. and urge them to describe themselves as "Chartered Architects."

Streatham Common Extension.

Professor S. D. Adshead was appointed to represent the R.I.B.A. and to act as Hon. Vice-President in connection with the Norwood Grove Purchase Scheme.

Hon. Corresponding Membership.

Dr. A. Kemal Ad-Din, Chief Architect to the Moslem Supreme Council in Palestine, was nominated for election as an Honorary Corresponding Member.

Reinstatement.

The following ex-members were reinstated :

As Licentiate : H. Sesom-Hiley.
As Associate : A. C. Denny.

Notices

SPECIAL AND BUSINESS GENERAL MEETING: 8 JUNE 1925.

A Special General Meeting will be held on Monday, 8 June 1925, at 8 p.m., for the following purposes:

To read the Minutes of the Special General Meeting held on 2 March 1925.

To consider the Council's proposals for the amendment of Bye-law 29 with regard to the representation of Dominion Allied Societies on the Council, and also the addition of the Chairmen of the four Standing Committees and to pass the following Resolutions:

(1) That Bye-law 29 (*d*) be amended by the addition of the following words:

> "Provided always that in the event of the representative nominated by any such Society being absent from the United Kingdom such Society shall be entitled to nominate a member of the Council of the Royal Institute for the time being who is practising in the United Kingdom to represent it upon the Council during the absence of the representative first so nominated as aforesaid."

(2) That Bye-law 29 be amended by the addition of the following words after paragraph (*g*):

> "(*h*) The Chairman for the time being of each of the four Standing Committees referred to in Bye-law 52."

(3) That the necessary steps be taken to obtain the sanction of the Privy Council to such additions to Bye-law 29 as are required to give effect to these resolutions.

THE FIFTEENTH GENERAL MEETING.

The Fifteenth General Meeting (Business) of the Session 1924–25 will be held on Monday, 8 June 1925, at the termination of the above Special General Meeting, for the following purposes:

To read the Minutes of the Fourteenth General Meeting held on 18 May 1925; formally to admit members attending for the first time since their transfer or election.

To proceed with the election of the candidates for membership whose names were published in the JOURNAL for 4 April 1925 (page 358) and 9 May 1925 (page 440), viz.: For Fellowship, 14; For Associateship, 5; For Hon. Associateship, 4.

To read the reports of the Scrutineers appointed to examine the voting papers for the election of the Council and Standing Committees for the Session 1925–26.

THE R.I.B.A. ANNUAL CONFERENCE NEWCASTLE AND DURHAM. 8 TO 11 JULY 1925.

Members of the R.I.B.A. and Allied Societies who propose attending the Conference are reminded of the following railway travelling facilities that are available.

From London to Durham a tourist ticket is issued, available for two months and with facilities for breaking the journey at all important points, for 58s. 3d. (3rd class).

From London to Newcastle the ordinary return fare is 67s. 10d.; but members could take a tourist ticket to Whitley Bay for 68s., enabling them to break their journey at Newcastle either going or returning, and by which they can, if desired, go on to the coast at any time within the period of two months.

Mr. Alfred Myers, railway agent, of 343, Gray's Inn Road, London, W.C., will be pleased to advise members who propose travelling from London and other centres, and also to issue tickets and book seats on application to him.

THE CITY CHURCHES.

An Exhibition of Drawings, Water-Colours and Photographs of London City Churches will be held in the R.I.B.A. Galleries from Friday, 5 June, to Saturday, 13 June 1925 inclusive.

The Committee in charge of the arrangements would be glad to receive from members the loan of any drawings suitable for exhibition. Drawings so lent will be insured and returned, carriage paid.

The Exhibition will be opened at 3.30 *p.m. on Friday, 5 June*, by Mr. J. C. Squire, President of the Architecture Club.

VISIT TO THE SIR JOHN SOANE MUSEUM.

A visit has been arranged by the Art Standing Committee to take place on Saturday afternoon, 6 June, to the Sir John Soane Museum, Lincoln's Inn Fields, W.C. As the number attending must be limited, members desirous of taking part are requested to make early application to the Secretary R.I.B.A., 9 Conduit Street, W.1.

THE R.I.B.A. NEW CLASS OF SUBSCRIBERS.

In the Supplemental Charter recently granted to the R.I.B.A., provision is made for the formation of a non-corporate class of Subscribers. The Council have the power to elect to this new class any persons who, not being professional architects, are interested in the activities of the Royal Institute and in architectural matters generally.

"Subscribers" will be entitled to use the Loan and Reference Library, to attend all General Meetings (except private Business Meetings) and to receive a copy of the Annual Report. They will not, however, be entitled to use in connection with their name or business any words or initials indicating that they are Members of or connected with the Royal Institute.

The annual contribution payable by a "Subscriber" will be £1 1s. The first payment will become due within two months of election and subsequent payments on the first of January each year. Subject to the additional payment of 12s. per annum, Subscribers will also receive post free the R.I.B.A. JOURNAL, which is published fortnightly during the Session (November to June) and monthly during the recess.

The Council cordially invite applications from ladies or gentlemen who desire to be thus associated with the work of the Royal Institute, and the necessary nomination form can be obtained on application to the undersigned.

IAN MACALISTER,
Secretary R.I.B.A.

EXAMINATIONS FOR CANDIDATES AS DISTRICT SURVEYORS IN LONDON AND AS BUILDING SURVEYORS UNDER LOCAL AUTHORITIES.

Attention is called to the fact that certain revisions have been made in the syllabus for these examinations. Forms of application for admission, containing the revised syllabus, are obtainable on application at the R.I.B.A., 9, Conduit Street, London, W.1.

Competitions

COMPETITION FOR NEW ART GALLERY.

The Art Gallery Committee of the Manchester Corporation have accepted the Award of the Jury in this Competition, but as their acceptance must be confirmed by the City Council, no announcement of the result can be made until at or after the meeting of the Council on June 30th.

In the meantime, the winner has been informed of his success, under the understanding that his name cannot be divulged until the decision has been confirmed, in order that he may prepare a perspective drawing in accordance with the Conditions of Competition, before the exhibition of the drawings.

CONCRETE COTTAGE PRIZES.

Ministry's Conditions for "Shuttering" Competition.

In view of an erroneous statement which has appeared in the Press that the Ministry of Health are offering a prize of £500 for the best system of "shuttering" suitable for the construction of concrete cottages, an official of the Ministry to-day (Thursday) said that the prize would be only £250. A further sum of £250 might be distributed in additional prizes, but this would be at the discretion of the Committee on New Methods of House Construction.

In adjudging the "shuttering," special consideration will be given to the following points: Economy; a satisfactory finish on the faces of the wall; the ease with which the "shuttering" can be handled by unskilled men; durability; facility for use with different designs of cottages; and adaptability for use with cavity walls.

Competitors are first required to send in drawings and descriptions, to reach the Ministry of Health not later than 31 May. From these proposals the Committee will select the most promising and call upon the proposers of these to submit samples of their "shuttering." Before the final selection is made, the methods will probably be subjected to tests under working conditions.

It is understood that the inventions submitted will be exhibited in the Housing Section at Wembley.

CAERPHILLY WAR MEMORIAL COMPETITION

The Competitions Committee desire to call the attention of Members to the fact that the conditions of the above competitions are not in accordance with the Regulations of the R.I.B.A. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime Members are advised to take no part in the above competitions.

NATIONAL COMMEMORATIVE WAR MONUMENT.

To be erected on Connaught Place, Ottawa, Canada. Closing date for receiving designs, 11 June 1925. Assessors Henry Sproatt, LL.D., R.C.A., Herman A. MacNeil, N.A., F. J. Shepherd, M.D., C.M., LL.D. Total cost not to exceed $100,000. Apply to the Secretary, Department of Public Works, Ottawa, Canada.

CHEAM PRESBYTERIAN CHURCH COMPETITION.

Members of the Royal Institute of British Architects must not take part in the above competition, because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

PROPOSED EXTENSION TO THE SHIREHOUSE, NORWICH.

Closing date for receiving designs 1 July 1925. Assessor, Mr. Godfrey Pinkerton, F.R.I.B.A. Premiums £150, £100, and £50. Apply to the Clerk of the County Council, Shire Hall, Norwich.

COMPETITION FOR A HIGH BRIDGE OVER COPENHAGEN HARBOUR.

Copenhagen Municipality hereby invite participation in an International Competition in connection with a High Bridge over Copenhagen Harbour.

The Municipality have set apart a sum of 35,000 kroner to be expended in prizes. There will be three prizes, the value of which will be fixed by a Judgment Committee consisting of Members of the Council, together with technicians chosen by the Municipality, the (Danish) Institute of Civil Engineers and the (Danish) Society of Architects. The largest prize will be at least 15,000 kroner.

Programme and particulars in Danish and English can be procured after 1 February 1925, from the City Engineer's Office, Town Hall, Copenhagen B, against a deposit of kr. 100.

The deposit is repayable after the judging, or previously if the drawings, particulars, etc., are returned in good condition. Projects to be delivered to the City Engineers Directorate, Town Hall, before mid-day, 1 September 1925.

After judgment the competing projects will be publicly exhibited at the Town Hall, Copenhagen.

LEAGUE OF NATIONS.

Competition for the Selection of a Plan with a View to the Construction of a Conference Hall for the League of Nations at Geneva.

The League of Nations will shortly hold a competition for the selection of a plan with a view to the construction of a Conference Hall at Geneva. The competition will be open to architects who are nationals of States Members of the League of Nations.

An International Jury consisting of well-known architects will examine the plans submitted and decide their order of merit.

A sum of 100,000 Swiss francs will be placed at the disposal of the Jury to be divided among the architects submitting the best plans.

A programme of the competition will be ready in February, 1925, and will be despatched from Geneva so that Governments and competitors may receive copies at approximately the same date. Copies for distant countries will therefore be despatched first.

COMPETITIONS (*continued*)

The British Government will receive a certain number of free copies. These will be deposited at the Royal Institute of British Architects, and application should be made to the Secretary, R.I.B.A., 9, Conduit Street, W.1, by intending competitors.

Single copies can be procured direct from The Secretary-General of the League of Nations at Geneva, for the sum of 20 Swiss francs, payable in advance, but will not be forwarded until after the Government copies have been despatched.

On the nomination of the President of the Royal Institute, Sir John Burnet, A.R.A., has been appointed as the British representative on the Jury of assessors.

THE NEW INSTITUTE FOR THE BLIND, BUENOS AIRES, ARGENTINE REPUBLIC.

An International Competition has been promoted for the Argentine Institution for the Blind, Buenos Aires, Argentine Republic.

A small number of copies of the Conditions have been deposited in the R.I.B.A. Library for the information of British Architects who may desire to compete.

A booklet containing the full text of the conditions with other information (translated from the Spanish) and a plan of the ground on which the Institution is to be erected is available for inspection at the Department of Overseas Trade (Room 42), 35 Old Queen Street, London, S.W.1.

COALVILLE PUBLIC BATHS COMPETITION.

The President of the Royal Institute of British Architects has nominated Mr. Alfred W. S. Cross, F.R.I.B.A., as assessor in this competition.

Members' Column

SUSSEX.—Member offers Board-Residence in old Farm House in district full of old churches and half-timber houses. Electric light, bath, telephone, part use of motor-car. Advice given to students on measured drawings.—Apply to Box 1845, c/o The Secretary, R.I.B.A., 9, Conduit Street, London, W.1.

DISSOLUTION OF PARTNERSHIP.

THE partnership hitherto subsisting between Cecil Henry Perkins, A.R.I.B.A., and Richard Greaves Brocklehurst, F.S.I., Architects and Surveyors, at Raymond House, 32 Theobalds Road, will be dissolved by mutual consent as from June 1st, 1925.

Mr. C. H. Perkins, A.R.I.B.A., will continue to practise under his own name henceforth, at the same address.

PARTNER WANTED.

OLD-ESTABLISHED West London firm of Architects and Surveyors is open to take suitable Partner.—Reply Box 4250, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

OFFICE ACCOMMODATION.

F.R.I.B.A. has ground floor offices to let in good position in Westminster.—Apply Box 3045, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

APPOINTMENTS VACANT.

ASSISTANT experienced in Domestic Architecture required by a firm of Seaside Architects. Good salary and prospects. State full qualifications.—Apply Box 1955, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

SHARE OF OFFICE.

A.R.I.B.A. wishes to share his large single room office on ground floor, Gray's Inn district, with another. Electric light, telephone, typist's services. Mutual terms.—Reply Box 3495, c/o The Secretary R.I.B.A., 9 Conduit Street, W.1.

MR. WILLIAM HARKESS.

MR. WILLIAM HARKESS [*A.*] has commenced to practise in Storrington, Sussex. His address until September will be Rowdell, Washington, Pulborough, where he will now be glad to receive trade catalogues, etc.

APPOINTMENT WANTED.

ARCHITECT'S ASSISTANT, disengaged, experienced in the preparation of working drawings, details, etc. (domestic and ecclesiastical), surveying old buildings, levelling, draft specifications, etc., with good general office routine.—Reply Box 8023, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

THE WREN SOCIETY.

MR. H. DUNCAN HENDRY, A.R.I.B.A., the Hon. Secretary of the Wren Society, has moved to 53 Doughty Street, W.C.1, and all communications should be sent to this address. Telephone Number: Museum 7308.

Minutes XIV

SESSION 1924–1925.

At the Fourteenth General Meeting (Ordinary) of the Session 1924–1925, held on Monday, 18 May 1925, Mr. J. Alfred Gotch, F.S.A., President, and later, Major Harry Barnes, Vice-President, in the chair. The attendance book was signed by 30 Fellows (including 8 members of the Council), 27 Associates (including 2 members of the Council), 10 Licentiates, and a large number of visitors.

The Minutes of the Annual General Meeting held on 4 May 1925 having been taken as read, were confirmed and signed by the Chairman.

The Hon. Secretary announced the decease of the following Members:

The Rt. Hon. Viscount Milner, K.G., elected Hon. Fellow 1914;

The Rt. Hon. Viscount Leverhulme, elected Hon. Fellow 1919;

Mr. W. L. Trant Brown, elected Fellow 1906;

Mr. J. H. France, elected Licentiate 1911; and

Mr. C. E. Mercer, transferred to Licentiateship 1925.

It was Resolved that the regrets of the Institute for their loss be entered on the Minutes and that a message of sympathy and condolence be conveyed to their relatives.

The following members attending for the first time since their election or transfer were formally admitted by the President:

The Rt. Hon. Lord Riddell, Hon. Associate; Messrs. D. Ivor Lewis [*F.*], J. Alan Slater [*F.*], F. D. Danvers [*L.*], H. J. Davies [*L.*] and H. V. James [*L.*].

Mr. G. Topham Forrest, Architect to the London County Council, having read a paper on "The Architectural Development of American Cities," and illustrated it by lantern slides, a discussion ensued, and on the motion of Captain O. E. Warburg, O.B.E., J.P., Chairman of the London County Council, seconded by Sir Frank Baines, C.V.O., C.B.E., Director of Works, H.M. Office of Works, a vote of thanks was passed to Mr. Forrest by acclamation, and was briefly responded to.

The meeting closed at 10.5 p.m.

It is desired to point out that the opinions of writers of articles and letters which appear in the R.I.B.A. JOURNAL must be taken as the individual opinions of their authors and not as representative expression of the Institute.

R.I.B.A. JOURNAL.

Dates of Publication.—1924: 8th, 22nd November; 6th, 20th December. 1925: 10th, 24th January; 7th, 21st February; 7th, 21st March; 4th, 25th April; 9th, 23rd May; 13th, 27th June; 18th July; 15th August; 19th September; 17th October.

LINCOLN MEMORIAL, WASHINGTON, D.C. Henry Bacon, Architect

The Architectural Development of American Cities

BY MR. G. TOPHAM FORREST [*F.*], ARCHITECT TO THE LONDON COUNTY COUNCIL

[*Read before the Royal Institute of British Architects, Monday, 18 May 1925.*]

IN considering the cities of the United States of America, and their development, from an architectural point of view, it is important o remember that we are considering cities which re distinctly modern. They were laid out in omparatively recent times, and although the great ncrease of traffic due to the coming of the motor ehicle was not foreseen, the lay-out in every case vas made with the knowledge and experience f the requirements of city development gained n the much older cities of Europe. The designers f the American cities planned for wide and straight treets—and their plans have been carried out, ince there was no insuperable difficulty to prevent ne development of the cities on the lines which ney desired. But how different the case of London —and it seems to me rather important at the outset nat we should realise this essential difference etween the conditions appertaining to London nd those that apply to New York and other elatively new cities of the United States of merica. In London we have a city whose history an be traced more or less through a period of two thousand years. Even if we only go back to the Elizabethan period we know that the site of London was confined within definitely restricted limits. Its streets were narrow and tortuous and its areas very densely built over. It is true, of course, that when the Great Fire swept away practically the whole of the City an opportunity presented itself of redeveloping the old town along lines which would have made London what Wren desired to make it, namely, the " most magnificent as well as commodious for health and trade." Had Wren been permitted to have his way, the City of London, as regards the widths of its thoroughfares and general lay-out, would have compared favourably with any city in America. But the difficulties with which Wren was confronted in the matter of property ownership, the establishment of churches and public buildings on particular sites, and the very natural tendency of all concerned in individual plots of ground not to forfeit their rights, made it impossible for him to effect any really radical change or improvement in the lay-out. Wren's plan for town-planning London could not be

put into execution, and if improvements were not effected at that time, may it not be thought that there is even less chance of modernising it to-day by widening its streets and increasing its open spaces? But its vast working and residential population, its tremendous commercial interests, its importance as the capital of a great Empire, its traffic problems and the constantly arising necessity for increasing the accommodation capacity for buildings in its more important business, Governmental and residential centres or areas, are constantly bringing home to all of us the absolute necessity for widened roads and more open spaces and higher buildings. And would it not be possible to learn something definite regarding these necessities from the ampler provisions made in respect of them in the essentially modern towns of the United States? I think we can learn a great deal.

London is changing, and London must continue to change. Everything points in that direction. Her building problems, because of these changes, are becoming more and more pressing; and it was this fact which led the London County Council to send me on a visit to America so that I might report on the construction and control of buildings, as well as on other matters related to the development of urban areas in that country. The Council, I venture to think, very rightly recognised that for its regulations and requirements with regard to the construction of buildings suited to the needs of a progressive commercial city, the carrying out of improvements and the increasing of the amenities of the great town for which it is responsible, the best information possible bearing on those subjects should be obtained—hence the choice of America.

The object of my visit had primarily to do with the construction and control of buildings, but I took advantage of the opportunity afforded to make a study of Town-Planning and Zoning and Housing, as well as of other matters that might possibly prove of assistance to the Council in connection with the work which falls to its Architect's Department. In other words, I have been studying the architectural development of the cities visited, more especially the cities of Washington, Chicago and New York.

I. Washington.—Washington was originally laid out in 1682 on rectangular lines in accordance with a plan prepared under the direction of its founder, William Penn. Upon this rectangular plan was superimposed a plan prepared in 1791 by the French engineer Major L'Enfant, under the personal supervision of President Washington. The object of that plan was to ensure that the development of the city might be appropriate to that of a capital city. The L'Enfant plan, however, was not rigidly adhered to, and the question of the future development of the city was reviewed in 1901 by a special Commission appointed by Congress. The Commission prepared a new plan, but in doing so they reasserted the authority of the L'Enfant plan and extended it to meet twentieth century conditions. During the past twenty years the essential features of the plan have been established, and the future will be largely a filling in of outlines. The result is a really beautiful city.

Washington would have been a still more beautiful city if L'Enfant's intention that all the Government buildings should be grouped along The Mall had been rigidly carried out. The Commission appointed in 1901 have recommended that in future this feature of the original plan should be adhered to. (I am sure we are all agreed that the Government buildings of London should be grouped in some such way, but so long as London has no plan to follow, the arrangement of our monumental buildings will be largely of an accidental character.)

There is one item of the development to which I would like to draw special attention, viz.: the Lincoln Memorial. As illustrating the large view taken of such matters in America, it is shown by the Washington Art Commission's Report that the scheme of this Memorial, involving the Mall system and Potomac Park, embraces a composition that, "greater in extent than the Tuileries to the Arch of Triumph; greater even than the London composition from Buckingham Palace to St. Paul's Cathedral, is susceptible of a development at once distinctive and magnificent."

The plan prepared by the Commission appointed in 1901 included not only the City of Washington, but the environs, that is, the whole District of Columbia. Large tracts of land are reserved as park lands, and without doubt the authorities mean to make the district of Columbia one of the most beautiful urban districts in the world. This reservation of park lands should appeal to those who are particularly concerned in the future development of London. The time has come when

steps should be taken to preserve large tracts of park land all round the existing built-up portions. Are we to go on building without making a definite break in the mass of buildings? Surely it would be folly to do so. Some body such as this Institute should take action, definite action and immediate, to ensure a great belt of park land all round Greater London.

II. Chicago.—As regards Chicago, although it is a commercial city, the attempts which have been made to bring about improvement, from an artistic point of view, show that the Chicago authorities are fully alive to the fact that a commercial city may also be a beautiful city. One of the great improvements now in progress is the provision of what is known as the new Lake Front. This

TRIBUNE TOWER, CHICAGO. John Mead Howells & Raymond M. Hood, Architects

As regards the treatment of the central portions of Washington, it should be remembered that whereas London is a great commercial and manufacturing centre, Washington is primarily a seat of Government. It was for this reason that I made a much closer study of the architectural development of Chicago and New York; these are commercial cities, and the problems with which they have had to contend, and are contending, are similar to the problems which confront us here.

improvement will include a new park built out into the Lake for a quarter of a mile, on ground which not long ago was 25 feet below the level of Lake Michigan. The remarkable manner in which the natural difficulties in connection with this and other improvements in Chicago are being overcome, afford an example which we may well bear in mind in considering the problems associated with the improvement of London. In connection with the same improvement Michigan Avenue has been

widened out into a great boulevard 131 feet wide as against 66 feet formerly.

As to the buildings in Chicago, it is interesting to note that formerly there was no limit as regards the height, but now, under the Zoning laws, the height is restricted and 264 feet is the maximum. Many of those qualified to speak on the subject are not at all satisfied that it is safe to allow buildings of a height of 264 feet. The Chief Engineer of the Chicago Board of Fire Underwriters argues for a limitation of 125 feet, and those who have made a special study of traffic conditions and the effect of high buildings on traffic congestion, also favour much lower buildings than at present allowed.

Chicago, as regards its central district, is certainly over-built, and the streets and transit facilities are so badly overtaxed that business is being forced from that district.

As to the architectural treatment of the principal buildings in Chicago, I would specially refer to the Railway Stations, in fact, it may be said that the high architectural standard of railway stations in all the cities shows that the companies are fully alive to the necessity of an imposing gateway to a city, and they realize that it is their duty and privilege to provide such a gateway.

All classes in Chicago are evidently bent on improving their city. Progress seems to be the watchword everywhere. In addition to the widening of Michigan Avenue, two outer boulevards have been built on the newly made Lake Park, and 24 million dollars have been set apart for the purpose of constructing a double deck street, 135 feet wide on its lower level, to carry heavy traffic. This double deck street will be open on its river side. Moreover, that congested part of the city, well known as the " Loop," is being opened out by means of widened boulevards into a rectangle, which will measure three miles by two.

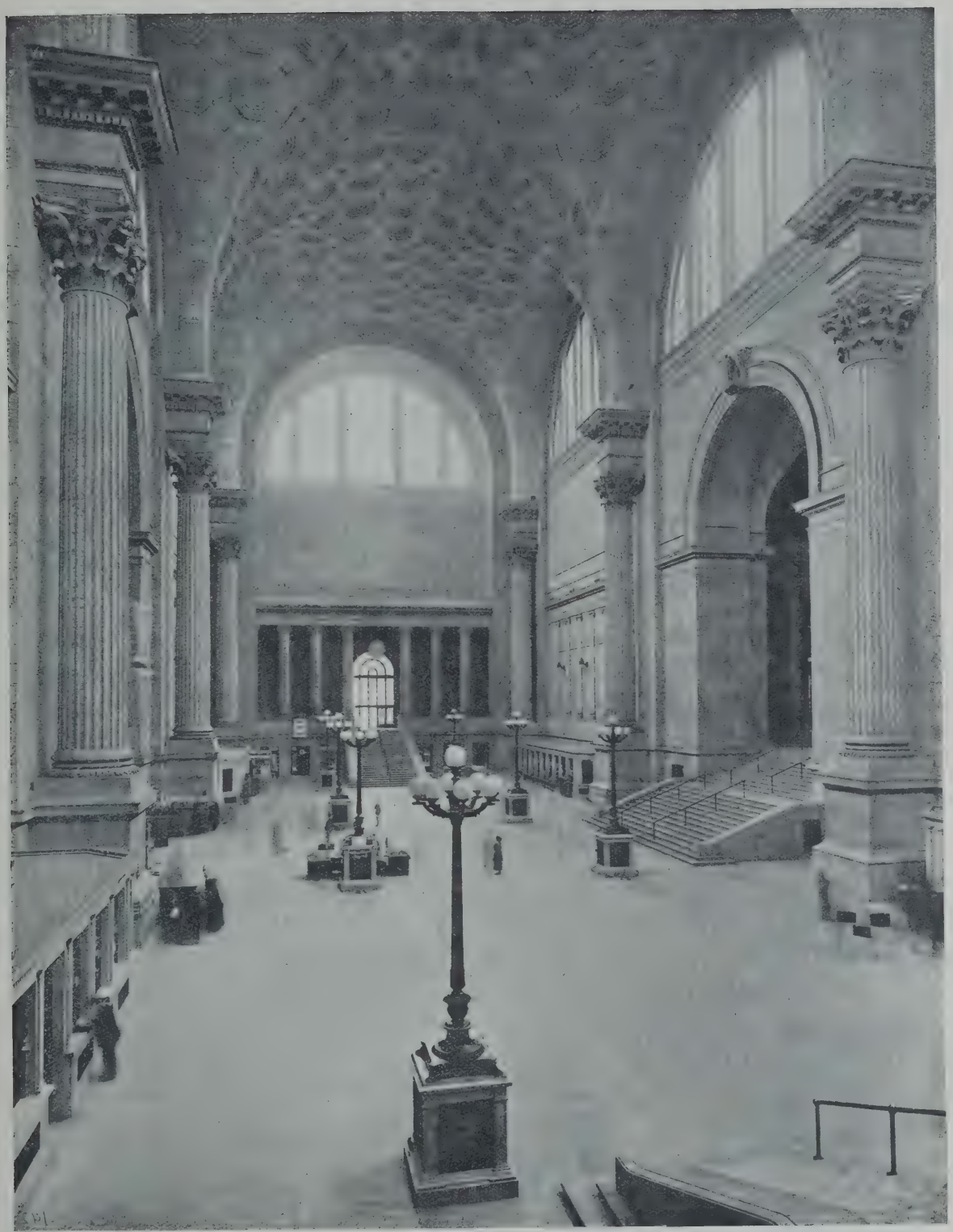
The improvement of Michigan Avenue has cost the taxpaper 16 million dollars, but it has added 100 million dollars in value to the taxable properties besides causing already the investment of another 100 million in profitable building. The American is known the world over as a wide awake business man and these improvements, quite apart from their contribution to the beauty of the city, constitute a first-class financial investment.

If Washington has something to teach us in regard to the treatment of the environs of our city, Chicago has also a great deal to say to us about the value of improvements within the city's borders.

III. *New York.* This city is most like London of all the American cities in respect of the general character of its commercial interests.

The impression which one obtains as the steamer enters New York harbour is that Lower Manhattan is built on a hill, whereas it is built on an absolutely flat piece of land, but the buildings mount up into the form of a rough pyramid. This " first sight " of New York offers a clue to the very distinctive lines on which, as a city, it has been developed. When one comes to consider the site it would seem the physical conditions were bound to suggest that in order to obtain the greatest advantage of the available areas, buildings must be extended vertically in the manner which is now so obviously a characteristic of New York. Moreover, it would seem that this was bound to lead in its turn to the system of regulation and control denoted by the term " Zoning." We shall appreciate better the conditions applying to Central New York if we imagine the commercial districts of London, instead of being limited on the south side only by the River Thames, bounded by water both north and south, and for that matter east and west also. It obviously induced a condition of a very serious kind and soon involved the preparation of a very comprehensive transport scheme for dealing with the transit to and fro of the concentrated day population. The conditions in Manhattan Island may be said to be the result of 20 years' intensive development between 1890 and 1910, during which period according to a publication recently issued by the New York Chamber of Commerce, the city " practically underwent a new creation. It was transformed in every respect applying to a metropolitan city . . . was virtually rebuilt with mammoth structures for commercial purposes, new and sanitary tenements for its working classes, and artistic homes for its people of means . . . its parks were beautified, new playgrounds were established, millions were expended upon its public schools, and in spite of stupendous difficulties the whole system of transportation was modernised."

The erection of the " mammoth structures " involved practically a revolution in constructive methods and the use of what were largely new materials, the increase in height of buildings of four or five storeys to as many as 57 storeys necessitating the careful consideration of an entirely new



GREAT HALL, PENNSYLVANIA STATION. McKim, Mead and White, Architects

constructive problem, forcing American architects and engineers into the investigation of the problem of their designs on entirely new lines, and the subsequent extensive employment of concrete, ferro-concrete and steel, as well as the employment of those materials for the general construction in combination with facings of stone, brick and terra-cotta.

As regards the general height of buildings in New York, it will be realized that the widths of the streets considerably reduce the scale of the buildings as compared with the effect which would be produced in London where the street widths are very much more restricted.

Buildings of great heights, such as are erected in New York, could not be contemplated for London, and in fact, they have never been seriously suggested. But there is a vast difference between " skyscrapers " and buildings slightly higher than those at present permitted in London and properly considered in relation to general distribution.

Perhaps it has not always been realized that our problem is not so much one of higher buildings, as of streets on which to put them ; traffic conditions demand wider streets.

I was rather interested a few evenings ago to notice the remarks of the Commissioner for Public Works of New York, who is now on a visit to this country. He referred to the various suggestions which had been made in New York for the alleviation of their traffic congestion and pointed out that high level roads, overhead bridges and underground passages had been considered, and the restriction of vehicles decided upon. Notwithstanding all these proposals, his conclusion was : " There is only one way to deal with increasing traffic, that is to widen the streets. Any other scheme can be merely a palliative and not a cure."

The congregation of a great number of very high buildings in the commercial part of New York has produced very difficult traffic conditions, and this result in a city of wide streets demonstrates why building should not be permitted in London of a greater height than at present allowed unless provision is made to meet the needs of traffic. In fact in the City of London, where the streets average 28 feet in width, if all buildings were carried up the full height at present permitted by the Act, the result would be disastrous from a traffic point of view.

Now as to obtaining widened streets in London, it seems to me that if owners are prepared to give up part of their frontage so as to contribute to the provision of wider streets, they should be compensated in the way of being allowed to build higher—in the most advantageous circumstances up to an overall height of 120 feet, but 120 feet should be the absolute maximum. In certain cases it might, however, be well worth while to allow owners to build to that height, if the principle were accepted that the right to build higher shall be the recompense for the voluntary widening of streets.

In the case of very high buildings in New York, the Zoning laws require what are termed " setbacks " (the Shelton Hotel is an interesting example of the application of these laws) above a certain height, and it is a point of architectural interest that whereas the older type of tall building to a large extent carried out the principle of expressing each storey or embracing a series of storeys within an " order " of architecture, as the height of the buildings increased, with the consequent unsuitability of monotonously repeating this treatment, such an application of the orders of architecture was dropped.

The newer buildings show in the main vast areas of perfectly plain walling, pierced by rectangular openings, the architectural interest being obtained by concentrating the enrichment, generally speaking, at the base and the upper termination of the structure. Some very splendid modern examples of building on somewhat fresh lines have been produced in this way.

As regards Zoning and the restrictions imposed under Zoning laws in regard to the height of buildings, it would appear that in America the adoption of Zoning laws has resulted from the more enlightened view recently held by Americans generally as to the principles on which cities should be developed from the standpoint of health and comfort and the amenities generally, which in the earlier stages were somewhat neglected in favour of more materialistic advantages.

The Zoning Ordinance includes detailed plans indicating (1) the restrictions imposed by the Zoning Ordinance in regard to height to which buildings may be erected in any particular section; (2) the extent to which buildings may cover any particular plot; and (3) the use to which the buildings may be put.

There are eight classes of districts for purposes of " height " throughout the city, and the heights allowed vary from quarter the width of the street to two and a half times the width of the street upon which

Bush Building, 42 Street, New York. Helme and Corbett, Architects

Bush Building—Night View

the particular plot abuts. The two and a half times districts are restricted to a very small proportion of the city located at the extreme southerly point of Manhattan. The two times districts are in the south of Manhattan, on either side of the Broadway, on the east and west boundaries of Manhattan abutting upon the Hudson River and East River respectively, and portions of Brooklyn and Queens abutting upon East River. The remainder of the commercial areas are included within the one and a half times and one and a quarter times height districts, and similar heights are permitted in some of the more densely built-upon residence areas. The residence areas generally are classified in the one times height districts.

For due appreciation of the effect of the height restrictions the width of the streets must be carefully observed. New York as compared with London has been laid out in a much more generous way as regards street widths. In Manhattan the main streets have a width of at least 100 feet and the cross streets 60 feet, whereas, in the centre of the City of London, Queen Victoria Street at its widest point is only about 72 feet and Cornhill about 63 feet, and yet, in this area, we have wider streets and more open space than obtain generally within the square mile. It shows that our problem as regards higher buildings is very different from that of New York, though even there, as members of the Institute will have gathered from Dr. Raymond Unwin's recent admirable Paper, the streets are found quite inadequate to deal with the extraordinary traffic that arises from the " skyscraper " buildings.

With regard to the " area " restrictions in New York, so far as the central districts are concerned, the same result is obtained as we, in some measure, obtain by the Building Act requirements as to " space about buildings." Zoning requirements, however, are applicable not only by specific rules as to rear and side yards, but also by percentages of the total site area, and although in some of the central districts they may be comparable with the Building Act, in the suburban districts, New York requirements may limit the extent of the building to 35 per cent. of the area of the plot—a very much greater restriction than obtains under the London Building Acts.

The third general restriction relates to " use." The American citizen, fully appreciative of the loss involved in the indiscriminate intermixture of buildings to be used for different purposes, has, by the suitable allocation of sites to special uses, sought to stabilise values, and there is evidence that this arrangement has had undoubted advantages in the general interest of the public.

For purposes of user the City of New York is divided generally street by street into residence, business and unrestricted districts. In the residence districts are permitted residence dwellings of all kinds. In the business districts, although commercial buildings generally are permitted, no business is allowed which would be noxious or offensive by reason of the emission of odour, dust, smoke, gas, or noise, and a number of trades are expressly excluded by name. No manufacture is permitted in business or residence districts. There are also special restrictions in regard to garages in residence districts.

These regulations apply to new buildings, and so beneficial has been the result of their adoption that the New York Chamber of Commerce in April of last year unanimously decided to support a Bill to give fuller powers to enforce the Zoning laws. In the resolution of the Chamber of Commerce it is stated that " the fundamental principle upon which Zoning is established is plain common sense and property-owners generally have approved. The purpose is to prevent the landowner from putting up a building to any height, in any place, of any size, and using it for any purpose, regardless of how much it hurts his neighbours."

Practically speaking, that is what any owner can do in London. He can place a factory right in the heart of a residence district and by doing so he takes the first step in the creation of what the Americans so aptly term " blighted districts," and no one can stop him. The bulk of the American city population is altogether in favour of Zoning ; it saves their home districts and at the same time stabilises building values.

As regards density of population, it is interesting to note that the area of South Manhattan is 8·35 square miles, and that the area of the business district of London, viz., the City, Westminster, Finsbury, Holborn and St. Marylebone, is just about the same—8·82 square miles to be exact, as against the 8·35 of Lower Manhattan.

The total day population of Lower Manhattan is just under 3,000,000 and of the London business area just over $1\frac{1}{4}$ million. In Lower Manhattan the density of day population is 352,000 persons

per square mile and of the London area less than one-half that figure.

Another interesting point in relation to the matter is that the average height of buildings in Lower Manhattan is stated to be between eight and nine storeys ; in the business districts of London it may be taken as between four and five storeys. So that in the business and commercial districts we have in New York a population twice as dense as that of London and buildings twice as high.

In one respect the conditions in New York are coincident with those in our own city : London with its narrow streets is congested with traffic and so is New York, although the latter's streets are comparatively very wide. The obvious inference to be drawn from this is that in each city the present buildings are the maximum which the existing traffic facilities can possibly serve. In the reconstruction of London's buildings we must, therefore, preserve a due relation between them and the streets on which they abut. This can be done in one of two ways : we can widen our streets if we want higher buildings, or we can restrict our buildings to their present dimensions and retain our present width of streets. Should London adopt a Zoning Ordinance it would appear that this matter of street widths will have to be most carefully considered, and in fact is a fundamental matter upon which all other questions must be based.

Quite a feature of New York at night time is, as you know, the external lighting of the principal buildings. The use of searchlights and floodlights has been very carefully thought out in order that the buildings may be seen at their best, a method of obtaining lighting effects which may be contrasted with the hideous advertisements which spread themselves so commonly over the frontages of buildings in the centre of London. The one emphasises the beauty of the buildings, the other detracts not only from the buildings but from the vistas of our best streets.

I might here refer incidentally, as a matter of general interest, to the provision of housing and educational buildings in the cities of the United States.

The shortage of housing accommodation is apparently just as real as in England, and similar reasons are put forward to explain that shortage—high cost of materials, decreased output, profiteering, and so on. But the steps taken to meet the shortage are different from those taken in this country since the War. There, it would be unconstitutional for the Government to take action similar to that taken by the British Government, although in some cases assistance is given out of the public funds by exempting owners from payment of tax in respect of new buildings.

Again, during the War the Government had to take special action to provide houses for War-workers, but that was done apparently as part and parcel of the War activities of the country. It may be said, therefore, that on the whole housing in the States is being provided entirely by private enterprise.

In this respect we find that conditions are similar to those prevailing in London. The private builder, as a rule, cannot for financial reasons build to let ; he can only build to sell. But occupier-ownershp has for many years been a noticeable feature of American housing conditions, and year by year the number of occupiers who own their houses is rapidly increasing. The latest figures show that in 1920 in some of the States the proportion of families owning their houses was no less than 50 per cent. to 56 per cent. The Government encourages house-ownership, and in a recent official publication it is stated that " the present large proportion of families that own their houses is both the foundation of a sound economic and social system and a guarantee that our society will continue to develop rationally as changing conditions demand."

When the American Government decided to build houses it was not because the shortage of housing was a new thing wholly by reason of the war. In an official publication it is pointed out that the war simply localised and aggravated a widespread, chronic, and steadily growing trouble of peace times. Capital had for years been more and more inclined to seek other channels of investment than housing, and rented dwellings, especially of the small single house type as distinct from apartments, had been considered on the whole as less and less profitable investments.

Wood is employed to a very great extent in the construction of American dwelling houses. Everything is standardised as far as possible to facilitate rapidity of construction. The houses are comfortable and attractive.

As regards the housing shortage in London, it seems to me that it would be possible to relieve that shortage by the use of wood as an extra material.

I know that the moment one suggests wooden buildings there is raised the objection of fire risk, but after a very extended experience of wooden buildings, the National Board of Fire Underwriters of New York has issued a code of suggestions for construction and fire protection in which the view is expressed that a well-built timber frame dwelling, provided with protective construction, is, as regards resistance to an interior fire, practically on a par with walled houses of the same design with wooden interior construction.

The London Building Act, 1894, permits a wooden building up to thirty feet in height, and not exceeding 125,000 cubic feet, provided it is one occupation and is distant at least eight feet from the nearest street, and thirty feet from the nearest adjoining property. Now, a building of 125,000 cubic feet would be equivalent to about twelve of the usual sized cottages erected by the Council, and I am suggesting to the Council that blocks of six cottages, i.e., about half the total size referred to in the Act for wooden buildings, should be erected on suitable sites, provided the buildings be kept twenty feet from other buildings and property.

Wooden buildings, of course, are not common in London, but a number do exist and have existed for many years.

I need hardly say that I am only recommending timber as a measure of expediency in view of the existing shortage. If labour and material were as abundant as in pre-war days I should not advocate any such departure from the normal form of construction.

New York, like Paris, has adopted apartment accommodation much more than we have, but it is likely that in the future this type of dwelling will become a more pronounced feature in London than has hitherto been the case.

In American apartment houses large roomy flats are provided. The standard of living is considerably higher than in London : higher wages are paid, and the artisan demands a good type of dwelling, for which he is prepared to pay a high rental. As regards the actual planning of the flats, the Americans, however, are not so far advanced as we are, but as regards the appointments of kitchens, lavatories, baths, etc., they are decidedly in advance of us.

In the various apartments in American houses all sorts of labour-saving ideas are incorporated, such as built-in ironing boards, fitted dressers, installations for vacuum cleaning, polished hardwood floors and wainscots, terrazzo paved corridors, gas fires, installations for the supply of hot water and other heating, all of which add to the utility and amenities of the dwelling.

American apartment houses are in many cases of comparatively great height, and a study of these indicated in some ways the solution of a problem to which I had been giving much attention for several years.

The problem of London's slums cannot be solved entirely by the erection of buildings on the outskirts. A certain proportion of the inhabitants of these areas must remain in London ; and, in fact, most of the people in a slum area prefer to remain in the neighbourhood in which they have their family and other interests. It may be unfortunate that it is so, and yet I suggest it is readily understandable.

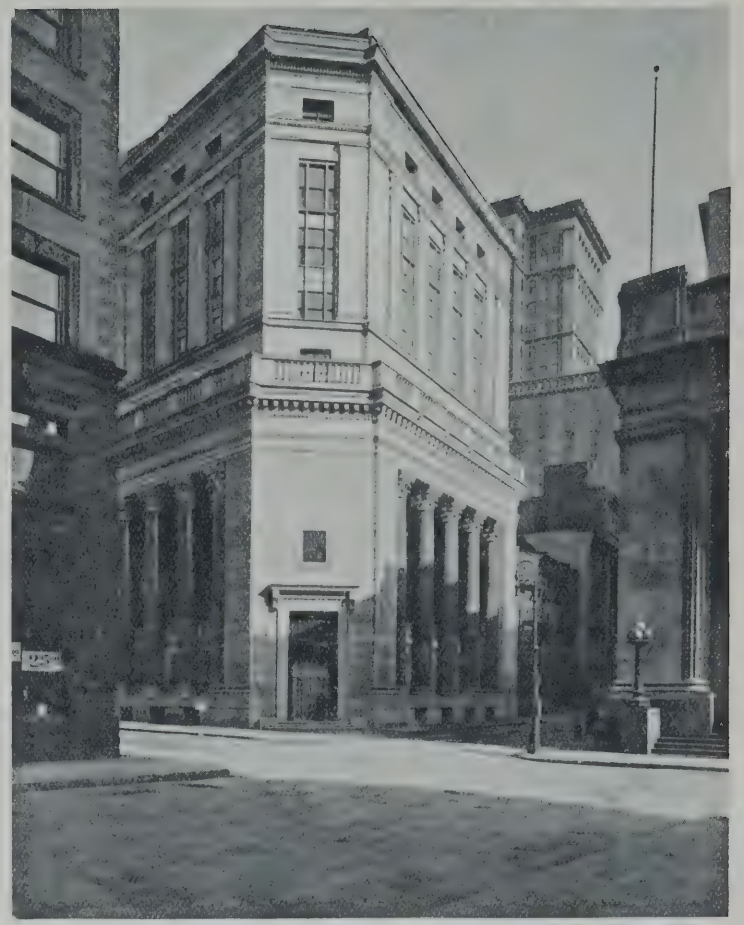
I have, therefore, prepared plans showing how the whole of the persons to be displaced on an area could be re-housed. Formerly the highest buildings erected by the Council were five-storey buildings, but I have now suggested nine-storey buildings for a particular area under consideration by the Council. In this scheme I am recommending that the ground floor be let out as shops, the first floor as offices and the next two floors provided with additional features in the way of fitments, in order to command higher rents than would be obtained for the remaining five floors. Steel and concrete will be largely employed in the construction of the buildings, as in buildings of this class and height in America.

As regards educational buildings, I was impressed by the fact that the American people spend much more on these than we do in this country, and in this connection I would quote, from the official report on my visit to the States, the following paragraph as regards elementary schools :—

" Under the present requirements of organisation, and taking into consideration examples of modern elementary schools erected by the Council, I am of opinion that no great improvement can be made in the present standard of planning, but it will be realised that modern elementary school planning in America has reached a stage that is comparable only with our own secondary schools.

" Doubtless, if economic conditions permitted,

Woolworth Building. Cass Gilbert, Architect



Seabord National Bank, New York City. Alfred C. Bossom, Architect

the Council would desire as regards its educational buildings to approximate to an equally high standard, but I feel that the recovery of the country from the effects of the war must not in any way be hampered, and therefore in this matter I do not propose to make any special recommendations arising out of my visit to the States. I recognise that during recent years in London there have been great improvements not only in school buildings, but also in regard to methods of instruction, and provided that such improvements are maintained, I do not consider there need be any cause for anxiety that other cities shall outstrip our own in matters of education."

In conclusion, I can only make the briefest reference to the State and City Art Commissions that are being appointed to an increasing extent in the States. More than twenty of the largest cities have such Commissions, and their aim is to ensure proper regard for amenities in the towns and cities and what may be called æsthetic consistency in their treatment.

I have emphasised the material aspects of the question: that roads adequate to traffic requirements be provided, that buildings be allocated to their proper user and located appropriately to the neighbourhood; but this is not enough. Let us also bear in mind the influence which arises from a due consideration of the æsthetic aspects of city development. Perhaps it would not, therefore, be out of place to suggest that the very obvious success which is being met with in improvement of the appearance of American cities and their environs, through the influence of Art Commissions, might well be considered in connection with the towns and cities in this country. In the case of London —with the vast importance resulting from its extent and population, its long history, its civic and Imperial importance, and the problems that arise from developments connected with its improvement from time to time—it is clear that appeal on occasion to an expert advisory body of the nature of that of New York might be of the greatest possible advantage. We cannot lose sight of the fact that there is a striking contrast between the general untidy, fussy, and almost squalid appearance of many parts of London—rendered worse by the extravagances of advertising—and the orderly and more consistently harmonious architectural treatment noticeable, or in process of development in cities of America like New York and Washington, and which may be assumed to be due to a large extent to the advantage they enjoy in respect of the amenities and the artistic aspect of life, from the possession of advisory Art Commissions. The recently formed Royal Fine Art Commission shows an important step in the right direction as applying to England, but its scope is not intended to cover such multitudinous functions as are fulfilled by the various Civic Art Commissions of America.

It is as new to us as it is commendable to read in the American National Fine Arts Commission's Report of 1919 :—

" Probably the next quarter of a century will mark the greatest building activity ever undertaken by the Government since the City of Washington was begun in the last decade of the eighteenth century. These new buildings should express the dignity of the Government and the highest taste in architecture : they should be located according to the well-considered plan that has been prepared ; they should not be set down in a haphazard fashion on lines put on the market by real estate promoters. Congress should control the location in such a manner as to enhance the dignity and satisfy the requirements of convenience."

As an example of the spirit in which the development of cities should be undertaken, I think this quotation from an official report can hardly be improved upon, and it is not surprising that with the general spread of such views in America, their great cities appear to be developing on such correct and splendid lines. It would seem almost as if their leaders in these matters were seeking a reversion to what may be called an Athenian view in city building, but on lines much more humane.

The very enlightened views regarding city development now being held by the citizens of America, and put into practice through the agency of their Art Commissions, will exert an incalculable influence upon the rising generation—a point of the very greatest importance.

Indeed, they obviously realise this, as was shown, for example, in an address by the late President Harding, when he pleaded for an America suitable in every way for the right development of, and the fullest possible advantage to its childhood, with, as he put it, " no selfish interest, nor material necessity, and no lack of opportunity preventing the form of education essential to the best citi-

zenship." I venture to think we need more generally to view our affairs along similar lines, and from the same elevated plane, if we would attain eventually the aspect and character of the ideal city.

The lecture was illustrated by lantern slides.

Discussion

MAJOR HARRY BARNES, VICE-PRESIDENT, IN THE CHAIR

Capt. O. E. WARBURG, O.B.E., J.P. (Chairman of the London County Council), in proposing the vote of thanks, said: I gather from some of the remarks that Mr. Forrest made that he has not a very high opinion of municipal administrators. I differ from him in that, but I would like to say that municipal administrators have a very high opinion of their chief officers. One of the chief officers of the London County Council, who to-day is entrusted with, perhaps, one of the greatest responsibilities the Council has to bear, is the Architect to the Council. It is an interesting address that we have listened to to-night.

Before I mention one or two points which occurred in his address, I would say one thing about the position of the chief officers of the London County Council, because it is relevant to our discussion to-night. One of the great difficulties of a great municipal body like my own is, that in selecting our highest officers we have to find men who combine very high technical attainments with very high administrative capacities, and we all feel on the London County Council that in Mr. Forrest we have such a man. When we have appointed him, and when he is engaged in the rush and burden of the ordinary work of the Council, another of our problems is how to keep him fresh—how to see that he has time to get all the possible information about the latest developments, which will help him in his work, and consequently will help the Council in their work. And I think it is to the credit of the Council that amidst the great burden of work which Mr. Forrest has to bear, it was found possible to spare him a sufficient time to enable him to go to America in order to familiarise himself and us with what is going on there. I am sure London will benefit very greatly from that visit, though I do not think we shall want to adopt all the plans which he has shown us on the screen to-night as being current in American cities.

In my experience of administration I find that London and Great Britain are rather different from a good many other countries which I know. We have a national tradition to build, whenever we can, upon the past; we like to select the soundest and safest foundations of the days gone by and build upon them, always changing and always adapting, but always retaining wherever we can—I am not now speaking of Waterloo Bridge!—always retaining, wherever we can, what is greatest and noblest in the past, and trying to fit it for modern uses. In that respect our spirit is different from the American spirit. There they contemplate sweeping away large areas and are constantly changing. I think when Mr. Forrest comes to apply some of his American ideas here, he will find that what are called "vested interests," but which might be better called the habits of the people and objection to change where it is unnecessary, will prevent so rapid a progress as might be theoretically desirable. All these problems which we have to solve are so closely interwoven and interconnected with one another, that I think there is an enormous advantage in tackling the problem rather slowly, in calling into consultation everybody whose experiences, or whose special interest justifies their being heard and their advice being taken. I am sure the Council would welcome the advice of such expert bodies as the Royal Institute in any problems which it has to solve, just as in dealing with such questions as town planning and the larger and more difficult questions of to-day we desire to get the views of the various expert bodies which have devoted expert attention to the subject. It is then the duty of the municipal administrator, having had expert advice, to decide, according to his judgment, as to what is best in the interests of the community as a whole. But I am sure that, judging by my experience—and even when we do not accept the advice tendered in its entirety, we derive great benefit from the advice. I feel that the more we can rub shoulders with one another, the better is the solution that we arrive at.

I do not think I need intervene in regard to the technical questions which Mr. Forrest has raised, because you are probably waiting to tear him to pieces in consequence of his advocacy of higher buildings, and to object to some of the things which he has shown with some pride on the screen. But I leave him to you: a man is always judged most harshly by his peers.

I would like to say how much I, personally, have enjoyed the interesting address which he has given us, and I move, on your behalf, that a very hearty vote of thanks be extended to him for the very interesting lecture he has given. I would only like to say one thing more, and it is this—and I am now getting back a little on Mr. Forrest's attack on municipal administrators—he should remember that in the multitude of councillors there is wisdom, but in the multitude of technical advisers there is sometimes a lack of unanimity.

The CHAIRMAN: I should say that our President has left the meeting with regret, but the train service to Kettering prevents his remaining to the end. I have now pleasure in asking Sir Frank Baines to second the vote of thanks which has been moved.

Sir FRANK BAINES, C.V.O., C.B.E.: It gives me very great pleasure to attempt, however inadequately, to second the vote of thanks to Mr. Topham Forrest.

There are certain points that arise in Mr. Forrest's paper which one would like to deal with a little more particularly. I do not want to deal with American architecture with that bated breath and that æsthetic delight in everything American which is sometimes displayed. I feel there is an enormous impressiveness in these gigantic cliff-like structures, which overwhelms the intelligence and blud-

geons criticism, but I am not assured that these great structures, raising patternings and shadows as if they were a gigantic cliff in which a new form of sand-martin was living, satisfy my need of the imperative necessity of beauty in architecture. I shall not say that we, as a British nation, have much to learn from this. I think one distinctive virtue of American architects is that they recognise the brilliance, the capacity and the genius of others by putting the seal of their appreciation upon the great work of Sir Edwin Lutyens, a great British architect. The most astonishing fact is that Americans are not only prepared to build, but they are equally prepared to tear down; they are as interested in destruction as in construction—always a sign of youth. When we see the great erections and constructions of the mediæval builders, and, coming to more recent times, when we see the results of the genius of men like Sir Christopher Wren and Chambers and Inigo Jones and Rennie—may I say?—when we see that, we as men who have the desire to appreciate art in architecture: when we see their creations we almost refuse to believe they are subject to the law of decay.

These are the thoughts which have occurred to me in realising how sincere and devoted an admirer our lecturer to-night is of American architecture. I think this: that anything which is good in American architecture, anything which we as normal English people can approve, whenever we examine it most carefully we see that it has had a most relative touch and connection with English standards: it has had a reversion to period buildings. They are using the standards which we use to-day, and it is advisable that we should recognise that the particular virtue of their standard is not their own, but is that of ourselves and this old-fashioned antiquated Europe, which I am very happy to think I belong to.

With regard to other points, controversial points—for nothing I have said this evening is controversial—such as whether we shall have buildings 120 feet high, I have attempted to prevail upon this gentleman to let me build 120 feet high, but that was outside the point of his argument to-night. But I am assured we shall not deal with the problem by asking the County Council to widen the streets, not by altering the conditions, or by postulating that there shall be this height, or that height, or the other, or by suggesting we should overcome the problem by any lesson which America can show us. Their culture and their civilisation are their own, and they belong to a different period. It would be better for our architects to work upon the solution themselves, without reference to the inspiring structures which you see in America.

You can see, from this, that I am thoroughly unqualified to second this vote of thanks; I am myself convinced of my inadequacy for this important function, but I can only thank you personally for allowing me to be here and to listen to the paper, which is full of information, full of matter, and which has caused in me such an intense dissatisfaction with American architecture.

The CHAIRMAN: There is no question of "allowing" Sir Frank Baines to be here to-night; he is one of us, and we welcome him here to-night for that very provocative speech. We are fortunate, in our Institute, in having a number of members of very expert qualifications and with a particular knowledge on this subject, and I am now going to ask one of them, Dr. Raymond Unwin, who has just returned from paying a visit to the United States, to support the resolution which has been moved and seconded.

Dr. RAYMOND UNWIN [*F.*], in supporting the vote of thanks, said: I agree with a great deal of what Mr. Topham Forrest has told us of American towns and architecture to-day. And I agree a little with what Sir Frank Baines has said by way of caution. It is very natural that anybody going to such a hospitable country as the United States should get a little overwhelmed, and should be inclined to present to us on coming back to this country a rosy view of the conditions in American cities. There is much to be said in admiration—and I have said as much as anybody—of the wonderful way in which American architects have solved new problems. I should be inclined merely to correct an impression which Mr. Topham Forrest gave. What he said might lead you to suppose that these newly designed buildings and the harmonious effects which they have produced in some of the streets, are more prevalent in the cities of New York and Chicago than they really are. If you look at an aeroplane photograph of New York, such as was circulated to us at the meetings of the American Institute of Architects the other day, you will see that the area in which there are skyscrapers and a majority of new buildings in the lower part of Manhattan, is but a fraction of Manhattan itself, and in a vast number of streets there is anything but an attractive architecture or a harmonious prospect. Though I do not think Mr. Forrest intended it, he rather conveyed the suggestion that America derives some great advantage from the plan of streets which was generally adopted. I should not like to have that supposed to be the case, because I think America derives a very great disadvantage from it. The checker-board plan is the nearest thing to chaos which a plan can be. It provides one size and shape of site for all purposes; it provides streets of one or two widths for all purposes. It is one of the most expensive plans for streets which can be devised. True, the streets are generally wide. It is, however, easy to over-estimate the value of wider streets. Streets do not increase in efficiency in proportion to their width; it is not the width or the narrowness of a street which causes obstruction; it is the stoppages. Whitehall would carry many times the traffic it does if you could remove the block at the two ends. In New York, in the same length as Whitehall, there would be seven or eight objectionable blocks, and that is where the trouble in New York arises. They have ten or eleven avenues running the length of Manhattan, each of which is one hundred feet wide, some of them wider, a provision which compares with three main roads running east and west in London, none of which is a hundred feet wide, and all of which are not more than half that in places. Yet we carry an enormous volume of traffic, because, fortunately, we get longer runs from point to point without any serious obstruction. In New York I do not think they have any points more congested than our worst; but whereas our bad points are numbered in tens, theirs are numbered in hundreds. I think it will be extremely difficult to solve the problem of the increasing density of occupancy of London by widening streets. At any rate, I press very strongly that experience in America—an experience which is generally recognised by Americans themselves, both town-planning experts and architects—is strongly against increasing the height of buildings at all.

Let us, at any rate, make sure that we have the provision for taking an increased traffic before we add to it. At present we have more traffic than we can manage ; and if motor cars should be adopted in this country in the proportion that they are adopted in America, we may have the number in London very soon multiplied by four. With that increase facing us, I urge that it is a very risky thing to increase the density of occupancy in any of the central London areas, whether for residential or for business purposes.

There is only one thing I want to say in regard to housing : that in New York they have a very different climate from ours ; they have very much more sunshine, often to such an intensity that they are glad to get out of the way of it ; so there may there be some compensation in having sunless rooms. But in this country we have too little sunshine. We depend on sunshine for health, and the construction of high buildings, which would prevent the sun reaching the lower rooms in the winter, when it is of most value, is open to serious objection. I think the health of London largely depends on the fact that the majority of the people live in houses two or three storeys high, and in spite of their being fairly closely packed, they get an average amount of sunlight into their rooms which is far greater than is found in the dwellings in New York, in spite of the fact that the sun is higher and brighter there. That is one of the greatest objections to increasing the height of the buildings in which we house the people. It is often said that in London extra space can be given with high buildings. As compared with New York, we are dealing with low land value, for two reasons. One is because we cannot gamble in land, owing to the restrictions on transfer ; the other is, that we have the habit of low buildings, and that carries low values. When you increase the height of buildings and the density of occupancy of the land, up goes the value of land, and it becomes more and more impossible to provide the necessary open space, which everybody admits you must provide. Experience shows that the higher the buildings, the less is the open space which can be provided with them.

With these suggestions—which are not criticisms, but comments—I wish to associate myself very heartily with the vote of thanks. I think Mr. Forrest has done great good in calling to our minds many things which we may learn from America. We may learn very much from America, and from many other countries, which is useful to us, and it is a very enlightened policy of the London County Council to send their chief architect to America to study their methods. Much of what Mr. Forrest said about their methods I agree with ; they share many of our difficulties ; they have far more than our expenses in building ; and he is right in saying that they are ahead of us in the organisation of the erection of big buildings, in their plumbing, in their fittings, and in the standard of quality of many of the goods supplied.

The CHAIRMAN : Before calling on Mr. Topham Forrest to reply I shall ask Mr. Delissa Joseph, Mr. Beresford Pite, and Lord Riddell to say a few words in support. I am sure Mr. Delissa Joseph will welcome the opportunity of breaking a lance with Mr. Forrest with regard to some parts of his paper.

Mr. DELISSA JOSEPH [*F.*] : So far as supporting the vote of thanks to Mr. Forrest is concerned, the task you have placed upon me is an easy one. We have all been completely interested and held by his paper. It was crowded with the results of his acute observation during his recent studies in America, and it was illustrated by some very remarkable pictures. On the other hand, I am bound to say that I feel a sense of disappointment in this paper, able, interesting and informing as it is. What I particularly feel—and I am certain Mr. Forrest, who knows how greatly I regard his many qualities, will not take it amiss when I say so—is a sense of disappointment that, after familiarising himself with the distinction and beauty of the American high buildings, he has come back and offered us so disappointing a result as suggesting that higher buildings here, whatever the circumstances, should be limited to 120 feet, as compared with the 700 or 800 feet in America, and that those buildings of 120 feet should only be sanctioned conditionally upon the owners of the land gratuitously widening the thoroughfares on which they abut, as a return for the privilege of raising the height of their buildings. One of the most difficult tasks, in the five years that I have been advocating this subject of higher buildings, has been to make it clear that there is no point of contact between higher buildings, such as I and those associated with me have proposed, and sky scrapers. Therefore I can entirely support the applause with which Mr. Forrest's statement was met to-night when he said there can be no skyscrapers for London. I am entirely with him ; skyscrapers of 600 or 700 feet we have no need for here, and we would not submit to them. But that is a very different story from that of permitting slightly higher buildings than those provided by the Act of 1894. I should have been content, as a contribution to this topic, if Mr. Forrest had said, " I think that, under certain conditions, I shall be able to advise buildings 120 feet high," because that would have been a great step forward from the familiar 80 feet, and he would have met, to an appreciable extent, the claims of those who have been advocating this change. But when he says, " I can only advise 120 feet buildings provided, in return, the owners of the land gratuitously widen the thoroughfares," he is taking away with one hand what he gives with the other. After all, the most distinctive characteristic of British policy has always been opposition to anything that savours of confiscation ; and yet here is the suggestion that the advantages of an adequate development of central London shall be made the subject of a penalty upon those who desire to attain it ; that a man shall only be entitled to raise his building if he allows the authorities to confiscate a portion of his land as a consideration for that raising. Apart from the fact that this proposition involves the element of confiscation, which will never be accepted in this country, you have this fact—that, if it were adopted, you would be taking away the value of the lower storeys by reducing their area for the widening, and giving, in exchange, upper storeys of lower value. It is well known that under no conditions can the upper storeys approach the value of the lower storeys ; therefore if you reduce it to a matter of pounds, shillings and pence, it will be found that if you are to take away from the area of the lower storeys for the purposes of widening the thoroughfares, gratuitously, then the upper floors secured by the increased height will not be more than 50 per cent. of the value of the lower storeys. And it is also obvious that, if you reduce the land area, notwithstanding the increased height, you are not, in the

result, producing a sufficient increase in the total accommodation in the central positions of London for residential and business purposes to justify the change. I am hoping that we have not heard the last of this subject from Mr. Topham Forrest. Perhaps I have done him an injustice in criticising, at such length, what was little more than a passing observation ; and it may be that when he has had time further to digest the impressions of his interesting journey, and can present his results in a more elaborate form than to-night, we may find we have in him a more sympathetic adviser. But I would like to make it clear before I sit down—if I have not done so already—that the proposition put forward by Mr. Forrest only to sanction higher buildings by the gratuitous abandonment of land, is impracticable. I hope my criticism will not take away from the sense of earnestness with which I ask you to permit me cordially to support the vote of thanks to Mr. Forrest.

The CHAIRMAN : We are all of us very much indebted to Professor Beresford Pite for adding to our records an account of his visit to America, which will be read with as much pleasure in America by American architects as that with which we have listened to him here to-night. Nothing has been said to-night to shake the lack of faith which Capt. Warburg has in the unanimity of experts. I shall now go outside the rank of experts, but not outside our own ranks. I shall call upon the latest Honorary Associate of the Royal Institute of British Architects, who was welcomed here to-night by our President—Lord Riddell, who is also, I may say, the first fruits of our amalgamation with the Society of Architects.

The Right Hon. LORD RIDDELL : Not being an architect, I feel I can compliment Mr. Topham Forrest unreservedly upon his most admirable paper. You can compliment a man on his paper without agreeing with all that it contains. Something has been said to-night as to the laudation of American architects and American institutions. My position is this : I have been to America, and have had a great deal to do with Americans. It is most desirable to compliment Americans—American architects and other persons who are engaged in different vocations, but what I object to is the neglect in expressing appreciation of the fine things which we have in our own country. I am not an architect, but I am fond of architecture, and as I go about our own country I see a great many buildings which I am sure all experts would recognise as very fine buildings. But we never hear anything of them. We hear of the beauties of America, of the progress of America, but we hear very little of the modern architectural beauties of this country. We hear very little of the modern progress due to Professor Pite and others who have trained architects to be much in advance of their immediate predecessors. I was surprised that Mr. Topham Forrest made no reference to the real basis of American town-planning. Washington was laid out by the French engineer, Major L'Enfant, with the view of protecting the President and Government of the United States. Washington was so laid out that a small military force could sweep its avenues by artillery. That system of laying out cities with spacious, straight avenues formed the basis of the best American town-planning, and probably developed into the squares so much admired by many who go to America.

There is one question I should like investigated regarding the American system of building—the aggregation of huge numbers of people on small sites. I should like to know whether the health of Americans is equal to the health of the people in this country. The aggregation of the population is obviously only one factor, and there are often many factors which produce a certain result. Do Americans live longer than we do ? Are they more healthy ? If they do not live longer than we do, and if they are not as healthy, is it due to this aggregation of population in small areas ? Dr. Unwin, as is usual with him, made a profound observation. He said it remained to be seen whether Americans had met their problem in the best possible manner. American conditions are different from ours, and while recognising the ability of Americans in meeting the conditions they have had to meet, it does not follow that American methods are suitable for our country, though there are many points in connection with architecture which English architects might very well copy. For instance, there is the size of the drawings. All working drawings there are on a much larger scale than ours, and before the American starts to build he has everything shown complete, even down to the bell-pushes in the rooms. Consequently "extras" do not loom so large in America as they do with us here. I have spent much in building during the last ten years, and can assure you that the question of extras is a serious one for us laymen ; it is a question to which I think British architects ought to direct their attention. In fact, it is so important that I am thinking of offering—of course if I get the consent of the Council—a prize for an essay to be competed for each year by the students on the best method of avoiding extras. It is not often that, as a ratepayer, I have the privilege of seeing the Chairman of the London County Council in such a position that I can address a few observations to him. I feel specially fortunate in having that opportunity to-night. Captain Warburg may be surprised to know, considering the amount of criticism all public bodies receive, that I am a humble admirer of the London County Council and the self-sacrificing—I am not saying this in any humorous sense—body of men who look after the interests of this great community. Only those acquainted with the transactions of the London County Council can appreciate the vast amount of work done by that body and its various committees, work which produces no payment, nor any of those honours which public men look for.

I proceed to say a word of criticism. It has been pointed out to-night that our position is different from that of America, and that the circumstances which have to be met in an old city like London are different from those which obtain in new cities. I lament to say, though I am a ratepayer, that the London County Council has not been as active in recent years as in former years in carrying out improvements in the heart of London. Much could be done to improve traffic facilities if some well-thought-out improvements were devised, which could be carried out at a comparatively small expense having regard to the vast importance of the benefits to be derived from them. As the Chairman is here to-night, also Mr. Forrest, I suggest to them that they should take an early opportunity of producing some schemes which will give us more fine streets and add to our transport facilities.

Before I sit down I should like again to thank Mr.

Forrest for his paper. As I listened to him to-night and looked at the photographs, I thought of the enormous amount of labour involved in his paper, and of the lucid way in which the points were put. I much doubt if these wonderful town-planning architects in America could have produced as good, certainly they could not have produced a better, report than that which has been read to us by Mr. Forrest.

The CHAIRMAN: I think if Lord Riddell, every time he speaks to us, is going to offer a prize, we shall welcome him here very often. But we do welcome him, because we realise the enormous part he plays in the education of this country on all sorts of subjects, and if we can get the Press to inculcate in the people of this country a love of architecture, our work will be greatly helped.

It is customary to throw open the meeting to general discussion, but at this late hour I am sure you do not wish me to do that to-night. All I want to say is this: My general impression after listening to this paper is, that whatever else Americans are, or are not, they have got a great habit of building, and it is a habit which must commend itself to all architects, whether they build just in the way that one likes or whether they do not. If one could see in this country, growing up amongst its citizens on the one hand, and its great capitalists on the other, a preparation for a great architecture and a determination to get it, I think we shall have got something from America which will indeed be well worth having.

I now propose to offer to Mr. Topham Forrest this vote of thanks.

The vote was carried by acclamation.

Mr. TOPHAM FORREST (in reply): I intend only to say a few words at this late hour; but I want to point this out rather emphatically—that I have given you to-night simply my impressions of America as I saw it. I am very glad Professor Pite said a few words about the purity of American architecture, because I wanted to impress upon the audience some of these beautiful works, not their heights. It was not their heights principally that I wanted to put before you, but what I call the purity of the architecture of these latest buildings.

With regard to the other matters, which are too contentious to speak about here, I have no doubt my Council will, in due time, officially receive the Report and will perhaps ask the various committees which I have reported to, to go into it very carefully. That is a matter, of course, for the near future.

The following contribution to the discussion has been received from Mr. Alfred C. Bossom [F.]:

I very much regret my inability to be present when my friend Mr. Topham Forrest read his paper on "The Architectural Development of American Cities." Having lived in the States for the last twenty odd years, I have had the opportunity of actually seeing how many of the great cities have grown.

When I first arrived in New York in 1903, the "World" building topped the landscape, but to-day it is almost buried among the lower stratum of buildings, as the normal structure in that vicinity has reached such a height that it has made the skyscraper of 20 years ago look like a cottage.

Of course, living as close to such rapid changes as have taken place there may have caused much to escape my attention, but there is one feature that does project itself very strongly upon my mind.

London was substantially rebuilt after the Great Fire. Paris changed itself almost entirely at the beginning of the last century, and it does seem that there comes a time when every great city passes through the process of rebuilding, and a very great many of the largest American cities are actually passing through that stage now.

During the nineteenth century the majority of the big cities in the States were built up, or rather grew up, and this largely at the whim of men whose scientific or artistic knowledge was decidedly limited, but fortunately the buildings they built in practically every case were not very expensive. Again, the first men built on the corners of the streets, which was a very satisfactory coincidence, for, these buildings being all quite insignificant, it means very little to pull them down and replace them by modern structures.

Thus, there is a tidal wave of rebuilding of all of the important corners of the largest cities throughout the United States, and as the treatment of the corner buildings largely settles the character of the property and the buildings that fill in between the corners, it is very likely that before the next twenty years have passed hardly any of the older mid-Victorian structures will remain standing in the important sections of the main streets.

In 1900 the majority of the buildings were either of what is termed "brown stone" or rock-faced structures, or finished, to use an American expression, with the cast-iron front.

The Chicago Fair demonstrated the tremendous advantage of the lighter coloured building, and consequently the white building or the slogan of "make your city a white city" became the cry of the great majority of Chambers of Commerce (which in America are very active) throughout the United States. Slowly now this is passing and more colour is being used.

Such matters as zoning have been treated very fully by Mr. Forrest, but there is one other consideration that has had the greatest influence upon the development of the American cities—after, of course, the æsthetic and commercial points of view have been satisfied—and that is reduction and almost total avoidance of expense of upkeep charges and liabilities to repair.

Any matters that need daily attention, such as polished brass, difficult painting requirements, and so forth, are most studiously avoided, and although the life of an American building is never considered as being of great duration, this quality of making the first cost the final one has had a most dominating effect both upon the materials used and the type of design employed.

A lack of sufficient highly-skilled labour has caused the development to meet these requirements of what are largely machine-made structures, and composition in mass form always dominates minor detail. The unexpected so often found in the architecture of other countries is consequently not one of the characteristics of America's architectural development.

I regret exceedingly not having had the great pleasure of having heard the paper which has just been read, but like many of my friends in the States, I shall look forward with the very keenest interest to seeing it when it is printed.

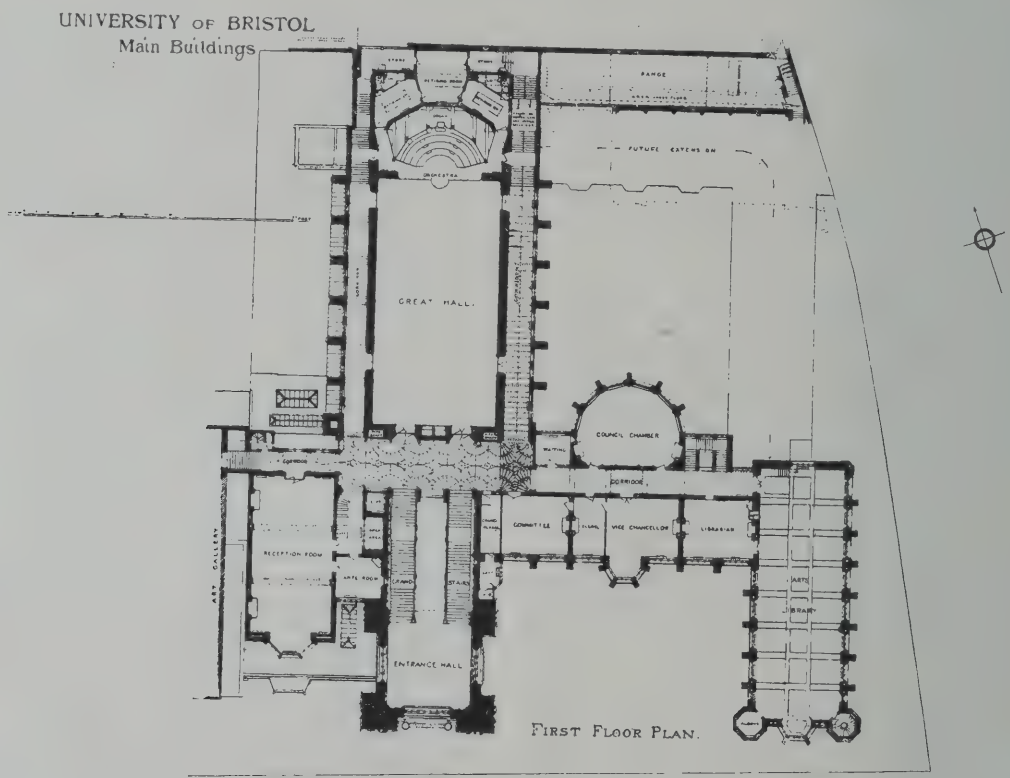
Bristol University: The New Buildings

Opened by His Majesty the King, on 9 June 1925

BY HUBERT C. CORLETTE [*F.*]

IT would indeed be ungracious if I did not begin this note, which attempts to appreciate fairly the work of a brother architect, by some preliminary observations. First let me acknowledge this: It is not only the City of Bristol and her citizens that owe much to the generosity of the members of one family. The whole profession of architects may, perhaps, feel a sense of gratitude in knowing that private munificence made this to satisfy public needs by aiding the whole community out of the results of personal success. The University has been founded, built, and endowed, by the members of one family. And we may be permitted to record the names of Mr. H. O. Wills, Mr. Henry Herbert Wills, and Sir George A. Wills, as of men who were not only local but national benefactors.

This Bristol building tradition runs in the blood



architectural enterprise, combined with so much skilled craftsmanship, possible. But particularly, the young and struggling school of architecture in Bristol may feel encouraged by it to battle against any difficulty that the study and pursuit of fine ideals may involve.

Here is an example for the students to study for it shews that an English national tradition still survives. It is a tradition in building, and a tradition in public service that will educate many generations. There is a long record in the history of Bristol of private desire of every Englishman. It is one that Wessex, the region of Alfred and the West Saxons, has preserved, as well as any other part of our Anglo-Saxon, and very Gothic, race. That tradition produced many of the most beautiful treasures bequeathed to us by a strictly national and Gothic enterprise. Some now look far afield to old Roman or Greek, to modern Italian or French sources, and not to those of a Gothic origin, for examples of building methods worthy of study. But Gothic is the architecture of freedom, and its appeal remains.

It is peculiarly interesting to see how this English radition has been developed and applied in a very prac-ical modern public building by a Bristol architect.

Every great work can be easily criticised in some way. t is not always so easy to understand and appreciate the

high. And out of it, from the lower level, a double staircase of stone, each flight of steps being 10 feet wide, leads up to the vestibule of the Great Hall above. Between the flights of stairs, and on the ground floor level, a corridor 12 feet wide connects the lower part

Entrance Hall

ner qualities and aims it presents. But we may all y to see these.

Sir George Oatley we can congratulate most cordially or the work he has done and for the honour conferred pon him for doing it so well.

The principal doorway into the new buildings is under ne tower. It opens into the lower part of the Entrance Iall which is a large fan-vaulted chamber, built in stone. 'his chamber is 85 feet long, 32 feet wide, and 72 feet

of the Entrance Hall with the other rooms on this floor. Another corridor gives access to the two cloak rooms for men and women.

These are arranged so that all persons using them enter at one end by separate doors and pass through to two different exits at the other end, from these there is easy access into a lobby 44 feet long and 20 wide, common to both the cloak rooms.

By this method of planning, the inconvenience and

congestion that would be caused by any effort to move back against the stream, and to leave the cloak rooms by the entrance doors, is avoided. The rest of the ground floor is occupied by various offices and by the Medical Library.

The basement provides room for the heating chamber and coal stores, the medical and the arts book stores, and accommodation for the Medico-Chirurgical Society, with some other offices. In the two book stores, the stacks, each about two feet wide, are packed closely together, and are arranged so as to pull out on rollers into the gangways which are wide enough to admit the whole length of a stack. Electric book lifts to the libraries are provided.

The first floor gives, by simple and direct planning, easy access to all the more important rooms. The upper portion of the Entrance Hall is lighted by the three windows in the lower part of the tower and by others as well.

The fan-vaulted vestibule which provides a crush space at the top of the main staircase and outside the Great Hall, or general assembly room, is 78 feet long and 20 feet wide. From this vestibule at the eastern end a corridor 10 feet wide leads to the wing in which the Arts Library is placed. And off it to the south are the Vice-Chancellor's Room, a Committee Room and a room for the Librarian. On the north is a staircase and the Council Chamber. A corridor eight feet wide gives access from the west of the Vestibule to the Art Gallery, and also to the Reception Room, a lift, and a secondary staircase. From both the east and the west ends of the Vestibule two corridors are arranged which run northwards parallel with the axis of the Great Hall, which is placed between them. The one, eight feet wide, on the west, leads to the side entrances to, and exits from, the Hall, platform and retiring rooms. The other, ten feet wide, on the east, gives access to similar entrances and exits and is also the main artery of communication between the new buildings and the older ones on the northern portion of the site. In the centra part of the same Vestibule, two wide main entrance doors to the Great Hall are placed. These doorways are directly opposite the two flights of steps of the principal staircase. And with the two fan-vaulted ceilings of the Entrance Hall and the Vestibule, they are visible as part of the long, wide, and high, view to be seen through the three arches placed at the head of the stairs and across the north and south axis line of the plan.

VESTIBULE

The whole of the planning and general design of this entrance scheme with its free and varied themes of scale, proportion and detail, is an extremely fine and impressive architectural conception. And as a prelude to the Great Hall, it is also an interesting contrast. The form, material, and colour of the Entrance Hall with its

stone vaulting and walls, the large windows, with stained glass and other notes of colour, is, in a way, but properly on a smaller scale, echoed without repetition, in the Vestibule. And once inside the Great Hall, it is easy to feel, and see, that there has been a definite idea governing depths of general form have been kept in mind. All these are architectural and not archæological matters. And it is easy to see in all this work how an architect and his aim is helped by skilled craftsmanship. Here that skill has evidently been held together in co-operation

GREAT HALL (Platform steps temporary)

the approach from the one hall to the other. The Great Hall is 100 feet long, 50 feet wide, and 55 feet high. The whole is covered with a framed roof made of English oak constructed and designed on the hammer-beam principle. The size or scantling of the timber used has been considered carefully. Not only have the structural needs been observed, but also those of scale at different heights above the eye. And, in combination with these, the related subjects of colour, of line, and the sculptural so as to produce a fresh and a modern result along the lines of English traditional methods of work.

It seems quite appropriate that Bristol should build a fine timber roof of this kind, for the hulls of the old oak ships that were the foundation of her trade and general prosperity were floating timber frames of much the same kind. The architect who designed and arranged its structural principles and thought out every detail of it, has, it is evident, been ably supported by the enthusiasm

of builders keen about their work, and also by a body of skilled carpenters and joiners who took delight in the opportunity this building has provided for the exercise of their abilities.

The Arts Library has a floor area 100 feet long and 34 feet wide, and it is 31 feet high in the centre. The book-cases are arranged so that there are reading alcoves between each pair with a gangway down the centre of the room. And, above, there is a continuous gallery with cases and alcoves planned in the same manner, but with a long open well in the centre over the gangway. The ceiling of this Library, like that of the Reception Room, has a good decorative plaster ceiling.

The Reception Room is 64 feet long by 33 wide and 20 high. At the north end, opposite the oriel window, is a music gallery over the corridor. The walls like those in the Great Hall are panelled with oak.

Projecting to the north, and overlooking what will in the future be a quadrangle, is the Council Chamber.

This room is, in shape, part of a 12-sided figure, with windows in six of the sides, and buttresses between them to stiffen the walls against the thrusts of the stone vaulted ceiling. On the stone wall behind the dais on the corridor side of the room there are carved shields bearing the coats of arms of various benefactors of the University.

On the two floors above various lecture and class rooms are provided. Other rooms are arranged on mezzanines between the main floors and in the Tower are Common Rooms for professors and also for men and for women students.

The site of the new buildings is at the top of the hill at the end of Park Street, the main frontage being 278 feet to Queen's Road with a depth of 292 feet. All the masons' work is Pennant or Bath stone from the Box Ground or Monk's Park beds with Clipsham for the weatherings and carved, moulded or exposed parts outside. The ground rises rapidly from this front northwards to the terrace on which the older buildings of the University stand. Such a situation gave an opportunity for architectural handling which has been admirably used, for the view from the lower end of Park Street, by College Green, near the Cathedral, has now become one of great dignity and beauty. The long rising avenue of buildings in Park Street leads the eye naturally up to the fine new tower at the top where its mass, and height of two hundred and fifteen feet, is outlined against the sky. This tower is to the left or west of the site as it is seen from Queen's Road. The Library wing is on the east. And between these is a forecourt a little over one hundred feet wide and about seventy feet in depth. The recessed part of the front is that which contains the rooms for the Vice-Chancellor and the Librarian, and a Committee Room. By a fortunate decision a strictly English external form of building was adopted. It is what would be called late Gothic in character. But it is not revival Gothic nor does it attempt to follow or to copy precedent in any slavish way. It is quite modern, fresh, thoughtful, and free. And it is because of the freedom and variety, in general form or outline as well as detail, which is possible by using Gothic building methods, that this scheme settles down so well as a whole among its surroundings. But though there is this freedom of treatment used the work displays no freaks. There is in it no expression of a desire to be new by a false striving after novel surprises. Such efforts are not necessary in any endeavour to carry on, and at the same time to develop, within reasonable limits, the beauties of a national tradition in building. And this particular work is valuable because it proceeds on these lines controlled with a strong sense of the fitness of things in a practical and usable plan. The plan clearly recognises and provides all that modern aims and desires for convenience and economy of administration demand. But these things have been achieved by the support of a deep knowledge of technical building methods. The crafts of the mason, the carpenter and joiner, the plasterer, and of all the many other skilled men who help us to realise our aims in plan, design, and structure, have, it is clear, been intimately understood by the designer, the architect, the creator and builder-in-chief of this conception. There is little doubt that Gothic methods of building can be made, by those who know them well, to satisfy any modern demand. They are so flexible and so free. And they can be used if necessary with much decorative detail or with none at all. Plain surfaces and a regular distribution and balancing of parts can be used alone or with any variety and change that may be desired. In this work there is much detail of various kinds. But it is appropriately used. There is a refreshing irregularity, and not a forced idea of the picturesque, in the grouping of the larger parts of the whole. And there is also, within some of those parts themselves, quite a strict regularity of rhythms, a symmetry and balance, with repetition, among the necessary practical features, like the windows, or in the still smaller details of a decorative nature, which has been used to give expression to definite character. The carving of the stone-work is clearly Gothic in feeling but it is modern in much of its manner of cutting, and in the subjects that have been cut. There are grotesques, but they are not copies or imitations of any we have seen. And there are heads of soldiers, in caps, or shell hats, as they were used in the War. All these take their place quite easily and well with the great head of a bearded professor in one of the main string courses that runs along near the level of the parapet. And heraldry, in all the rich brilliance of strict blazonry, has been used inside, and also outside, the building to give that touch of fine colour and gold without which a building is only half complete. There are nine large heraldic shields of arms well placed and admirably coloured on the tower. They are distributed on the south, the east, and the west sides just above the lower windows that light the Entrance Hall.

Looked at as a whole it may perhaps be said that the general character of the external design follows closely along the traditional lines of English building to be seen at Oxford or Cambridge in many of the older College foundations. And it is surely well that this should be so for these buildings indicate how much mediæval thought has done to promote modern development, particularly by education, and how history in the past is a part of our present equipment for fresh progress. The modern University has a Gothic origin. And it may well be housed in a building that will remind us of that fact. It may too remind us of much more than this that we may forget.

The Gothic instincts of the English people still live and thrive. The English Monarchy is a Gothic institution which has survived many times the threat of political, ecclesiastical, and other revolutionary invasions. Windsor Castle and the story of Runnymede tell us something of its history. The English Constitution is a Gothic tradition and not a Greek or a Roman theory. By it we know, and see, and feel, that the freedom of England is a Gothic achievement, a commonwealth, and not a democracy. That fact is fitly built into the Gothic Houses of Parliament. The Common Law of England is a Gothic heritage. And it is preserved by the judges that sit under the roofs of our Gothic Courts of Justice in the Strand. The ancient Universities of Europe were founded by Gothic aspirations, and directed by Gothic energy, seeking freedom from the trammels of Italian repression. Oxford and Cambridge still exhibit in their buildings the force of that effort to move away from a state of ignorance to one of informed ability. And now Bristol, one of the most modern of our modern Universities emphasises a fact,and reiterates an appeal, by using a Gothic building in which to house a truly Gothic institution. But it does not yet provide a school of architecture which would help to perpetuate in our future buildings some of the beauty, and recover some of the skill, our national Gothic masters in art knew how to use so ably, so rationally, so scientifically, and, so well.

The Tower

Exhibition of Drawings and Photographs of Wren's Churches in the City of London

ON Friday, 5 June, Mr. J. C. Squire, President of the Architecture Club, opened the Exhibition of Drawings, Water Colours and Photographs of London City Churches which has been organised by the Royal Institute of British Architects in their Galleries in Conduit Street. Mr. Arthur Keen, Hon. Secretary, presided. The following were among those present at the opening ceremony and the private view :—

Lord and Lady Annaly ; Lord Riddell ; Lord and Lady Morris ; Lord Ashfield ; Lord Terrington ; Lord and Lady Jessel ; Lord Ystwyth ; Sir Kynaston and Lady Studd ; Sir T. Vansittart Bowater, M.P. ; Sir Archibald and Lady Sinclair ; Sir Harry Foster ; Sir Frederick Sykes, M.P., and Lady Sykes ; Sir Arthur Churchman ; Sir Charles Allom ; Sir Murdoch and Lady Macdonald ; Sir Richard Davies ; Sir Charles Walston ; Mr. and Lady Margaret Duckworth ; Mr. H. B. Lees-Smith, M.P. ; Major MacAndrew, M.P. ; Mr. F. G. Rye, M.P. ; Mr. Hilton Young, M.P., and Mrs. Young ; Mr. J. C. Davidson, M.P., and Mrs. Davidson ; Lieut.-Col. Henderson, M.P. ; Mr. Alfred Barnes, M.P. ; Mr. J. B. Couper and Miss Couper ; Mr. and Mrs. Cecil Harmsworth ; Major Cadogan ; the Rev. Prebendary and Mrs. Perry ; Mr. Herbert Baker, A.R.A. ; Mr. Alderman Josiah Gunton ; Mr. Gordon Selfridge ; the Master of the Grocers' Company ; the Master of the Cutlers' Company ; the Master of the Painters' Company ; the Master of the Society of Apothecaries ; the Master of the Haberdashers' Company ; the Rev. Prebendary and Miss Hobson.

Mr. ARTHUR KEEN, in opening the proceedings, said that all who read their *London Mercury* knew Mr. J. C. Squire very well, and among all the remarkable productions of his pen in that journal there was perhaps nothing better than a certain one on the subject of the London City churches. It was of some length, in verse, so replete with delightful humour that it was most amusing to read, and through it all showed such admirable appreciation of the beauty and interest of these churches and of their value as memorials of the history of a great city that it marked Mr. Squire at once and permanently as the friend of those architects who were striving to keep these churches in being and to defend them against those who ought to be their chief defenders. They could think of no one more suitable than he to open their exhibition, and he asked Mr. Squire to perform that office.

Mr J. C. SQUIRE said he thought there were a large number of people better qualified to open this Exhibition than himself. He did not, however, know of any place more suitable for the holding of such an exhibition than the Galleries of the Royal Institute, for healthy living art was always accompanied by a reverence for the work of the past. If they looked round the walls they would see a variety of drawings and a large number of photographs. They would observe that the majority of the photographs were taken by Mr. Yerbury, who was now the most distinguished architectural photographer in the country. They had been taken primarily with the view of helping the architectural bodies in the preservation of the City churches. The Chairman had referred to the great mass of people who talked about the churches, yet many of them had never been inside one, and their knowledge extended to the view that could be seen from a taxicab. There were even among the actual defenders of the churches those who were really unfamiliar with them. Those present that afternoon, however, had shown their desire to make their attitude towards the churches perfectly clear. No one of the opinion, an opinion which he believed to be held by the Bishop of London, that nothing erected after the Gothic era could be of æsthetic value could appreciate the churches. The Bishop had announced that he would rather resign his See than see the Church of St. Bartholomew pulled down, but he also seemed to suggest that nothing not belonging to the era of St. Bartholomew's could be regarded as coming into an æsthetic category, but could only be regarded as being built for a purpose which was not now being fulfilled. Those who did not take that point of view found in the back streets of the city an enormous variety of pleasure; a variety which was now expressed on the walls of the Institute Galleries. Mostly by Wren within the limit of one narrow period and in one marked style they showed he had secured variety in his detail, and had completely avoided monotony. The photographs and drawings of steeples and towers showed the resemblance that existed in a family between brothers and sisters. Within that form he really did more than they could expect any one man to do. These steeples were known to some extent: what was not known was the interior of the churches. There again they found an immense variety and wealth of hidden beauty stowed away, almost unknown by the people whose business did not carry them to the City. Let them take the Church of St. Stephen Walbrook, known to architects and some laymen as a work of experiment in the style of St. Paul's : in the words of the American language " A try-out." It was beautiful in its rounded curves and a triumph of mathematics. Take again the simple Church of St. Mary Abchurch : nothing could give an idea of the beauty of this building. He mentioned St. Mary's because it was not one of the most famous, like St. Bartholomew's. He would mention the well-known Church of St. Bride as the classical steeple was a triumph of Wren's art, coming as near to a Gothic effect as a classical structure could. Further east a more Gothic edifice was noticed. The tower of St. Dunstan's had a crown of flying buttresses of almost incredible slenderness. It was said at the time that the steeple would never stand the weather, to which Wren replied, that the tempests might rage and his other steeples fall, but the steeple of St. Dunstan's would remain erect. His prediction in this case has been fulfilled.

He could deal for a long time with the merits, qualities and details of the large number of City churches : but there were one or two points he would like to mention in direct relation to particular churches. Of recent years there had been a distinct threat to their existence. It should be remembered that those associated for their destruction thought that by this means funds might be

raised, by the sale of sites, which might enable fresh buildings to be erected. But it was not a question of one or two churches going. In a process of this kind it might mean that all the churches practically would be destroyed. Within the last 200 years half of the churches designed by Wren had gone "West." If they turned to Mr. Walter Bell's book on the Great Fire of London they would find that the hands of the eighteenth and nineteenth century despoilers had caused nearly as much destruction as the fire. They could be certain if they did not put their foot down hard they would not have a single church left ; one by one they would go until nothing remained but St. Bartholomew's and St. Paul's—if it had not fallen down—and if the present Bishop were not succeeded by another prelate who had different views as to Gothic art. The churches were not only great architectural monuments but were also great historical monuments. Everyone was linked up with the social life of the capital of this Empire, and there was scarcely one which did not contain memories of one or more great Englishmen. In one church was the record of the birth of Milton ; in another, in the vestry, he had found the marriage certificate of Shelley. There was not a single church which was not linked up with the finest elements of the State. It was the duty of everyone of them to make themselves so well acquainted with these buildings that if controversies arose they would be prepared with facts with which to surprise their opponents. One other thing, the view of St. Magnus the Martyr, although a most beautiful church, was now shut off by Adelaide House. The view of the Monument and the Church of St. Magnus had been shut out. That was the sort of thing that was likely to happen if the general public, and that meant the clients of the architects, did not consider merely the beauty but the responsibility of their buildings.

Mr. Squire then declared the Exhibition open.

The CHAIRMAN said that the meeting was not held for discussion or it would be easy to speak at considerable length on the subject of the churches. Their safe-keeping was mainly a matter of appreciation, and he hoped this exhibition would help to secure this appreciation, but the best course that they could adopt was to visit the churches themselves and, happily, most of them were now open for a considerable time every day.

He wished to convey the cordial thanks of the Institute, not only to Mr. Squire but also to all who had contributed to the success of the Exhibition. They had relied very much on Mr. Yerbury's photographs, most of which had been taken specially for the purpose, and it seemed to him that some of them were probably the best photographs of architecture ever made ; there were a number of water-colours by Mr. A. I. C. Bryce, Sydney R. Jones, and others ; two or three fascinating sepia drawings by Mr. K. Murray ; drawings by Mr. Hanslip Fletcher and Mr. Raffles Davison and Mr. Cecil King ; photographs by Mr. Will F. Taylor ; many exhibits lent by Mr. Batsford and many other drawings, prints and photographs for which they were very grateful A few things sent had not been considered suitable for an exhibition which was intended to be popular rather than technical, measured drawings for instance, but without accepting these drawings the Committee thanked the authors very cordially for offering them.

Correspondence

MR. RAFFLES DAVISON'S DRAWINGS AND SKETCHES : SUGGESTED PUBLICATION.

The Editor, JOURNAL R.I.B.A.—

London, 2 June, 1925.

DEAR SIR,—The recent exhibition in the R.I.B.A. Galleries of sketches by Mr. Raffles Davison brought a host of visitors who marked their appreciation of the practical value of his handiwork by purchasing all the drawings and many of the sketches.

We are not surprised at the interest thus displayed, for Mr. Raffles Davison possesses an instinctive sense of beauty, and has by his acute observation preserved for us an accurate record of British craftsmanship ancient and modern.

Though most of his drawings and sketches may have been published, they have never been brought together as one collection, and it seems to the subscribers of this letter that a permanent record of this kind would be of great value and interest. Such a publication would, in addition to its inherent merit and beauty, help to explain to posterity the outlook which inspired and governed the work of the architects of past generations.

In order to ascertain the support likely to be accorded to this project, we should be glad to have the names of proposed subscribers.—Yours faithfully,

(Signed)
S. D. ADSHEAD,
REGINALD BLOMFIELD,
EDWIN COOPER,
E. GUY DAWBER,
HENRY M. FLETCHER,
J. ALFRED GOTCH,
ARTHUR KEEN,
JOHN KEPPIE,
EDWIN LUTYENS,
C. H. REILLY,
A. E. RICHARDSON,
ASTON WEBB,
MAURICE E. WEBB,
HERBERT WIGGLESWORTH.

*** If members who wish to become subscribers to the proposed publication will send their names to the Editor he will be glad to forward them to the proper quarter.

The Editor, JOURNAL R.I.B.A.—

DEAR SIR,—May I be allowed through your columns to express my most sincere thanks to the Royal Institute of British Architects for the kindness they have extended to me in allowing an exhibition of my sketches to be held in their Galleries ? If anything could have added to the pleasure and gratitude I have felt it is the unfailing courtesy and help which the hard-worked officials of the Institute have extended to me.—I am, yours faithfully,

T. RAFFLES DAVISON.

MR. TOPHAM FORREST AND HIGHER BUILDINGS.

2 Basinghall Avenue, London, E.C.2.
9 June, 1925.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—The observations which I made after the reading of Mr. Topham Forrest's paper on American architecture were founded upon Mr. Forrest's expressed view that higher buildings should only be permitted where owners consented to the setting back of their premises.

The following morning *The Times* announced the publication of Mr. Forrest's report to the London County Council on his American visit, and, on purchasing a copy, I found that, in that report, he recommends higher buildings up to 120 feet on certain conditions and in certain situations, which recommendations he did not disclose when reading his paper.

Had I known of these valuable concessions, I need scarcely say that I should have abstained from criticising Mr. Forrest's paper, as it is obvious from his report that he has become a convert to higher buildings.

Yours faithfully,
DELISSA JOSEPH [*F.*].

BIRTHDAY HONOURS LIST.

The congratulations of members of the R.I.B.A. will be cordially extended to members of the Institute who appeared in the list of Birthday Honours announced on June 3.

GEORGE HERBERT OATLEY, R.W.A. (Fellow)—Knighthood.

SIR FREDERIC GEORGE KENYON (Director and Principal Librarian British Museum) Honorary Associate—G.B.E.

HENRY ARTHUR CROUCH (Consulting Architect to the Government of Bengal) (Fellow)—C.I.E.

LIVERPOOL UNIVERSITY.

DEGREE CONFERRED UPON SIR GILES GILBERT SCOTT, R.A.

In the presentation for the Degree of Doctor of Laws on Sir Giles Gilbert Scott by the University of Liverpool on Friday the 5 June, the terms of the address were as follows :—

" MY LORD AND CHANCELLOR,

" Rarely does a generation find its opportunity : rarely does the opportunity find the man. Our generation in Liverpool has been blessed in that the opportunity and the man have found each other. For a second time, given a great opportunity, Liverpool has trusted in youth and youth has shown its power. Elmes was not twenty-four when he designed that noblest of civic buildings, St. George's Hall ; Giles Gilbert Scott was not of age when there came to him the vision of a great Cathedral. That was a quarter of a century ago. To-day his vision, shaping itself, is becoming fact : his inspiration has becomes ours. But not ours alone. We feel its influence even though the realisation is not yet complete—its austerity, its mighty power, its witness to higher things. We can dimly imagine what its influence will be upon Liverpool and its generations yet unborn, the influence of this city within a city, this city of God set upon a hill, whose light cannot be hid.

" On behalf of the University and in proud and humble recognition of what Liverpool owes to a great architect, in the name of the Senate and of the Council I present to you, my Lord and Chancellor, Giles Gilbert Scott, Knight, Royal Academician, Fellow of the Royal Institute of British Architects, for the degree of Doctor of Laws, *honoris causa*, of this University."

HAM HOUSE.

R.I.B.A. VISIT ON 16 MAY.

Ham House is probably known to many, but the visit on 16 May proved a pleasant surprise to those of the party who had not previously seen its treasures.

Approached from Twickenham Ferry or Petersham, it appears secluded in sylvan surroundings.

Built in 1610 by Sir Thomas Vavasour on a plan shaped as an H, with loggias as at Holland House but on the north front, it passed in 1633 to William Murray, created Earl of Dysart in 1643, and it has remained in the possession of these earls. The beginnings of successful men are not without interest, and it is related that William Murray was appointed " Whipping Boy " to Prince Charles I.

In 1672 the Countess Elizabeth of that time, whose second husband was John, Duke of Lauderdale, enlarged the house by building in the space on the south side of the hall between the east and west wings, and made othera dditions. She filled the house with most of the furniture and pictures of the period. In course of time the gables have been removed and hipped roofs with a modillion cornice substituted without parapet or capping. Most of the windows have been modernised with sashes, but many with mullions remain. The floor over the hall was early in the eighteenth century removed so that it is now as high as two storeys with a gallery on all sides for access to adjoining upper rooms.

The wealth of pictures by Vandyck, Lely, Kneller, Reynolds, and others was appreciated,and the long gallery remains, as the inventory has it, " with two and twenty ' Picktures ' with carved gilt frames." The tapestries of the early eighteenth century in the Cabal Room were executed after paintings by Watteau, with well drawn figures in natural and lively action in a landscape of quiet colouring, and singularly free from the multi-coloured and bizarre effect of so many tapestries.

The interior of the house was gracefully described to the party by Mrs. Cabell.

The gardens and shrubberies are in keeping with the age and charm of the house, and the wilderness contains some grand old Scotch firs and other trees planted in the seventeenth century. T. C. A.

DINNER TO MRS. ARTHUR STRONG.

An influential committee of which the Earl of Beauchamp is chairman, has been formed to hold a dinner in honour of Mrs. Arthur Strong on her retirement from the Assistant Directorship of the British School at Rome. The dinner will take place at the Hotel Cecil on Tuesday, 14 July. The Earl of Oxford will be in the chair. The tickets for the dinner are 12s. 6d. and may be obtained from the Secretary, Mrs. Brooke, 3 Arkwright Road, Hampstead, N.W.3.

Allied Societies

LEEDS AND WEST YORKSHIRE ARCHITECTURAL SOCIETY.

The annual general meeting of the society was held at the Philosophical Hall, Leeds, on Friday, 8 May, 1925. The 49th annual report, for the year 1924–5, was adopted. Owing to deaths and resignations the membership has decreased from 204 to 192.

The prizes were distributed and an exhibition of students' drawings was held at Leeds on 28 November 1924. Mr. Alban Jones, president, gave his address before 82 members and associates.

During the session informal evenings were held. On 19 February and 30 March 1925, members exhibited drawings of recent works; the president suggested the inauguration of a " Diploma Portfolio " to which present members be asked to contribute illustrations of their executed works including one autograph drawing, and all new members on election, one or more of the illustrations to be selected for inclusion in the portfolio to form a record in the Society's Library. At the second meeting there was discussion on the Press and Architecture; it was thought that a similar interest to that now shown by the London Press and public in architectural matters should be fostered locally. A small annual or bi-annual exhibition of local architecture was suggested, with competent criticisms in the press akin to those now given to easel picture exhibitions, also that articles should be written on local street and domestic architecture in an interesting and intelligible manner for the lay mind in architectural matters.

The Junior Members held three very successful and well attended meetings, the first being on 21 January 1925, the subject of discussion being the work of Sir John Burnet, A.R.A., and Sir Giles Gilbert Scott, R.A. At the second meeting on 18 February the subject was Architectural Education, with particular reference to school and office training. At the third on 25 March drawings of a competition promoted by the Leeds Civic Society for a 'Design for a Bandstand" were on exhibition. The jury's award was read and criticisms were given by the president of the Leeds Civic Society, Lieut.-Colonel E. Kitson Clark.

During the session in May and November the Intermediate R.I.B.A. examination was held at the Leeds School of Architecture. An interesting series of competitions have been arranged for students of the Society. The following officers were elected for the session 1925–6: President, W. Alban Jones; Vice-presidents, Douglas Bowman and J. E. Stocks; Hon. Treasurer, W. Whitehead [*A.*]; Hon. Editor, T. Butler Wilson [*F.*]; Hon. Librarian, J. Addison [*A.*]; Hon. Secretary, F. L. Charlton [*A.*] Members of Council, V. Bain [*A.*], L. H. Bakes, Norman Culley [*F.*], G. H. Foggitt [*A.*], J. F. Walsh [*F.*] and F. W. H. Allison [*A.*], Associated Member.

LOAN LIBRARY CATALOGUE.

A new catalogue, brought up to date, of the Loan Library has recently been compiled, and can be now obtained on application at the R.I.B.A., price 1s. 6d., postage 3d. extra.

The Annual Elections

The results of the Annual Elections are recorded in the subjoined Report of the Scrutineers, which was read at the General Meeting on Monday 8 June.

TO THE CHAIRMAN OF THE GENERAL BUSINESS MEETING.

MONDAY 8 JUNE 1925.

The Scrutineers appointed to count the votes for the election of the Council and Standing Committees for the Session 1925–1926 beg to report as follows:—1,573 envelopes were received—434 from Fellows, 583 from Associates, and 556 from Licentiates. The result of the election is as follows:—

COUNCIL, 1925–1926.

PRESIDENT.—Edward Guy Dawber (unopposed).

PAST-PRESIDENTS.—Sir Reginald Blomfield (unopposed); John Alfred Gotch (unopposed).

VICE-PRESIDENTS.—*Elected:* Arthur Keen, 1,322 votes; Major Harry Barnes, 1,262; Sir Banister Fletcher, 1,195; Thomas Ridley Milburn, returned unopposed under Byelaw 29(a).——*Not Elected:* Henry Philip Burke Downing, 1,010. 1,539 voting papers were received, of which 15 were invalid.

HON. SECRETARY.—Edwin Stanley Hall (unopposed).

MEMBERS OF COUNCIL: FELLOWS.—*Elected:* Sir John James Burnet, 1,005 votes; Herbert Tudor Buckland, 944; Sir Edwin Landseer Lutyens, 942; Professor Charles Herbert Reilly, 867; Herbert Duncan Searles-Wood, 720; Sir Alfred Brumwell Thomas, 710.——*Not Elected:* Edward Prioleau Warren, 630; Walter Tapper, 608; John Alan Slater, 586; Edward John Partridge, 537; Alfred John Taylor, 520; Herbert Arthur Welch, 424; Delissa Joseph, 311. 1,539 voting papers were received, of which 39 were invalid.

ASSOCIATE MEMBERS OF COUNCIL.—*Elected:* Philip Waddington Hubbard, 860 votes; George Leonard Elkington, 851; Major Thomas Cecil Howitt, 808; Lieut.-Col. H. P. Cart de Lafontaine, 793; Manning Durdin Robertson, 716.——*Not Elected:* Stewart Kaye, 695; Frank Henry Heaven, 664; Ronald Aver Duncan and Charles Holloway James, 625 each; William Harding Thompson, 624. 1,539 voting papers were received, of which 9 were invalid.

LICENTIATE MEMBERS OF COUNCIL.—*Elected:* John Edwin Yerbury, 1,263 votes; John Carrick Stuart Soutar, 1,160; Lieut.-Col. Noel Huxley Waller, 1,091; Lieut.-Col. Percy Alfred Hopkins, 1,020; Augustus Seymour Reeves, 1,005; James Inch Morrison, 968.——*Not Elected:* Arthur Grove, 956; Thomas Craigie Marwick, 932. 1,539 voting papers were received, of which 6 were invalid.

REPRESENTATIVES OF ALLIED SOCIETIES IN THE UNITED KINGDOM OR THE IRISH FREE STATE.—*Five Representatives from the Northern Province of England.*—Arthur John Hope, Manchester (unopposed); Edmund Bertram Kirby, Liverpool (unopposed); Eric Morley, Leeds and West Yorks (unopposed); Henry Leslie Paterson, Sheffield (unopposed); George Reavell, Northern Architectural Association (unopposed). *Three Representatives from the Midland Province of England.*—Albert Thomas Butler, Birmingham (unopposed); Ernest

Richard Eckett Sutton, Nottingham (unopposed); James Stockdale Harrison, Leicester (unopposed). *Two Representatives from the Southern Province of England.*—George Churchus Lawrence, Wessex (unopposed); Harold Sydney Rogers, Berks, Bucks and Oxon (unopposed). *Three Representatives of Allied Societies in Scotland.*—Nominated by the Council of the Incorporation of Architects in Scotland: John Keppie, President of the Incorporation of Architects in Scotland; George Andrew Paterson, President of the Glasgow Institute of Architects; Charles Geddes Soutar, President of the Dundee Institute of Architects. *One Representative of the South Wales Institute of Architects.*—Charles Frederick Ward (unopposed). *One Representative of the Allied Societies in Ireland.*—To be nominated by the Council of the Royal Institute of the Architects of Ireland.

Representatives of Allied Societies in the British Dominions Overseas.—To be nominated by the Council of each of the following: The Royal Architectural Institute of Canada, the Federal Council of the Australian Institutes of Architects, the New Zealand Institute of Architects.

Representative of the Architectural Association (London).—Harry Stuart Goodhart-Rendel (unopposed).

Representative of the Association of Architects, Surveyors and Technical Assistants.—Charles McLachlan (unopposed).

Chairman of the Board of Architectural Education.—Maurice Everett Webb (unopposed).

Hon. Auditors.—Alfred Harold Goslett (unopposed); Frank John Toop (unopposed).

Art Standing Committee: Fellows.—*Elected:* Edward Guy Dawber, 1,233 votes; Francis Thomas Verity, 1,198; Halsey Ricardo, 1,194; Professor Stanley Davenport Adshead, 1,162; Francis Winton Newman, 1,159; Henry Vaughan Lanchester, 1,155; Sir John James Burnet, 1,151; Henry Philip Burke Downing, 1,124; Maurice Everett Webb, 1,079; Walter Tapper, 1,002.——*Not Elected:* Louis E. J. G. de Soissons, 904; Heaton Comyn, 858. 1,406 voting papers were received, of which 13 were invalid.

Associates.—*Elected:* Leonard Holcombe Bucknell, 1,181 votes; Cyril Arthur Farey, 934; Michael Theodore Waterhouse, 825; Herbert James Rowse, 824; William Harding Thompson, 769; Ronald Aver Duncan, 762.——*Not Elected:* The Hon. Humphrey Arthur Pakington, 700; Thomas Smith Tait, 642; Claude St. John Garle Miller, 575; Roderick Eustace Enthoven, 541. 1,406 voting papers were received, of which 23 were invalid.

Licentiates.—*Elected:* Arthur Grove (unopposed); Archibald Stuart Soutar (unopposed); Francis Robert Taylor (unopposed).

Literature Standing Committee: Fellows.—*Elected:* Louis Ambler, 1,172 votes; Oswald Partridge Milne, 1,156; David Theodore Fyfe, 1,113; Basil Oliver, 1,091; Charles Sydney Spooner, 1,088; Arthur Hamilton Moberly, 1080; Frederick Charles Eden, 1,008; Henry Martineau Fletcher, 997; Charles James Dawson, 972; Arthur Stratton, 964.——*Not Elected:* Edward Brantwood Maufe, 948; William Henry Ansell, 897; Ronald Potter Jones, 679; Frank Lishman, 616. 1,446 voting papers were received, of which 16 were invalid.
Associates.—*Elected:* Harold Chalton Bradshaw, 1,127 votes; Charles Cowles-Voysey, 1,053; Professor Lionel Bailey Budden, 930; Henry Castree Hughes, 898; Charles Edward Sayer, 809; Arthur Trystan Edwards, 738.——*Not Elected:* John Murray Easton, 702; Miss Isabel Maud Chambers, 697; Graham Burnell Tubbs, 583; Eric Rawlstone Jarrett, 569. 1,446 voting papers were received, of which 16 were invalid.
Licentiates.—*Elected:* Arthur Edward Henderson (unopposed); Lieut.-Col. Noel Huxley Waller (unopposed); John Edwin Yerbury (unopposed).

Practice Standing Committee: Fellows.—*Elected:* Arthur Keen, 935 votes; Max Clarke, 801; Frederick Chatterton, 774; George Hastwell Grayson, 729; David Barclay Niven, 684; Gilbert Henry Lovegrove, 665; Herbert Arthur Welch, 654; William Gillbee Scott, 649; William Henry Atkin-Berry, 645; Francis Jones or Alfred John Taylor, 568 each.——*Not Elected:* Edward Charles Philip Monson, 551; Thomas Ridley Milburn, 535; Charles Archibald Daubney, 509; Edward John Partridge, 506; Delissa Joseph, 499; William George Hunt and W. Henry White, 495 each; Harry Teather, 445; William Campbell Jones, 368; Arthur William Kenyon, 323; William George Ingram, 301; Charles Ernest Elcock, 295; Noel Dennis Sheffield, 265; Thomas Wallis, 260. 1,457 voting papers were received, of which 66 were invalid.

Associates.—*Elected:* John Douglas Scott, 1,100 votes; George Leonard Elkington, 1,063; Charles Woodward, 1,044; Harry Valentine Milnes Emerson, 1,042; Philip Waddington Hubbard, 996; William Henry Hamlyn, 671.——*Not Elected:* Charles Benjamin Smith, 656; Geoffrey Thomas Mullins, 537; John Henry Sturgeon, 530; Frederick Richard Jelley, 405. 1,457 voting papers were received, of which 24 were invalid.

Licentiates.—*Elected:* John Carrick Stuart Soutar, 922 votes; Joseph William Denington, 902; Augustus Seymour Reeves, 798.——*Not Elected:* Frederic Roger Betenson, 767; Albert Anthony Fillary, 543. 1,457 voting papers were received, of which 38 were invalid.

Science Standing Committee: Fellows.—*Elected:* Herbert Duncan Searles-Wood, 1,196 votes; William Edward Vernon Crompton, 1,066; William Robert Davidge, 1,031; Robert Stephen Ayling, 973; Professor Ravenscroft Elsey Smith, 966; Francis George Fielder Hooper, 945; Dr Raymond Unwin, 930; Digby Lewis Solomon, 798; Thomas Penberthy Bennett, 781; Edwin James Sadgrove, 773.——*Not Elected:* James Ernest Franck, 749; Charles Frederick Skipper, 746; John Edward Dixon-Spain, 710; Charles Edward Varndell, 672; Percival May Davson, 635; George Edward Withers, 497. 1,442 voting papers were received, of which 33 were invalid.

Associates.—*Elected:* Hope Bagenal, 1,104 votes; Edwin Gunn, 978; Richard Goulbourn Lovell, 786; Robert John Angel, 774; Percy William Barnett, 761; Harvey Robert Sayer 736.——*Not Elected:* Stanley Victor Bradford, 571; Charles Holloway James, 536; Samuel Pointon Taylor, 533; Charles Stanley White, 500; Alfred Ernest Mayhew, 469; Thomas Francis Ford, 248. 1,442 voting papers were received, of which 25 were invalid.

Licentiates.—*Elected:* Percy John Waldram, 1,076 votes; Ernest Hollyer Evans, 962; George Nathaniel Kent, 923.——*Not Elected:* Lieut.-Col. Percy Alfred Hopkins, 922. 1,442 voting papers were received, of which 47 were invalid.

Scrutineers—Henry Lovegrove [*A.*], Chairman, T. Frank Green [*F.*], Geoffrey C. Wilson [*F.*], F. B. Nightingale [*A.*], E. J. W. Hider [*L.*].

A.B.S. SCHEME OF PROFESSIONAL INSURANCE

Insurance to-day is a very complicated business and too much care cannot be exercised in the choice of an insurance company and of a policy. If, however, architects consult the Insurance Committee of the Architects' Benevolent Society, they are sure of obtaining competent guidance in all insurance matters. Especially favourable terms are secured by the Society, and every insurance negotiated through its agency results in a direct contribution to the Benevolent Fund. Enquiries should be addressed to the Secretary, A.B.S., 9 Conduit Street, W.

NOTES FROM THE MINUTES OF THE COUNCIL MEETING.

18 May 1925.

Regional Town Planning: London and Home Counties.

Mr. W. R. Davidge was appointed to represent the R.I.B.A. on a Joint Committee convened by the Town Planning Institute for the purpose of preparing a petition to the Prime Minister asking him to receive a deputation to make representations on the subject of the Regional Town Planning of London and the Home Counties.

By-laws with respect to New Streets and Buildings.

It was decided to make representations to the Ministry of Health on this subject.

The Law of Ancient Lights.

On the recommendation of the Practice Standing Committee it was decided to initiate a discussion with the Surveyors' Institution with a view to putting forward an agreed scheme for dealing with easements in a comprehensive manner by way of a Bill in Parliament.

Notices

BUSINESS AND SPECIAL GENERAL MEETINGS:

22 June 1925.

The Sixteenth General Meeting (Ordinary) of the Session 1924–25 will be held on Monday, 22 June 1925, at 8.30 p.m., for the following purposes :—

To read the Minutes of the Fifteenth General Meeting (Business) held on 8 June 1925; formally to admit members attending for the first time since their election or transfer.

To present the Royal Gold Medal to Sir Giles Gilbert Scott, R.A., LL.D.

SPECIAL GENERAL MEETING.

A Special General Meeting will be held on Monday, 22 June, at 9.30 p.m., for the following purposes :—

To read the Minutes of the Special General Meeting held on Monday, 8 June, 1925.

To confirm the following resolutions which were passed by the requisite majority at a Special General Meeting held on Monday, 8 June 1925 :—

(1) That Bye-law 29 (*d*) be amended by the addition of the following words :—

> "Provided always that in the event of the representative nominated by any such Society being absent from the United Kingdom such Society shall be entitled to nominate a member of the Council of the Royal Institute for the time being who is practising in the United Kingdom to represent it upon the Council during the absence of the representative first so nominated as aforesaid."

(2) That Bye-law 29 be amended by the addition of the following words after paragraph (*g*) :—

> "(*h*) The Chairman for the time being of each of the four Standing Committees referred to in Bye-law 52."

(3) That the necessary steps be taken to obtain the sanction of the Privy Council to such additions to Bye-law 29 as is required to give effect to these resolutions.

THE R.I.B.A. ANNUAL CONFERENCE

Newcastle and Durham.

8 to 11 July 1925.

All members and students of the R.I.B.A. and all members of the Architectural Association and of the Allied Societies are cordially invited to attend the Conference (see full particulars enclosed with this issue of the Journal.)

Members of the R.I.B.A. and Allied Societies who propose attending the Conference are reminded of the following railway travelling facilities that are available :

From London to Durham a tourist ticket is issued, available for two months and with facilities for breaking the journey at all important points, for 58s. 3d. (3rd class).

From London to Newcastle the ordinary return fare is 67s. 10d.; but members could take a tourist ticket to Whitley Bay for 68s., enabling them to break their journey at Newcastle either going or returning, and by which they can, if desired, go on to the coast at any time within the period of two months.

Mr. Alfred Myers, railway agent, of 343, Gray's Inn Road, London, W.C., will be pleased to advise members who propose travelling from London and other centres, and also to issue tickets and book seats on application to him.

THE R.I.B.A. NEW CLASS OF SUBSCRIBERS.

In the Supplemental Charter recently granted to the R.I.B.A., provision is made for the formation of a non-corporate class of Subscribers. The Council have the power to elect to this new class any persons who, not being professional architects, are interested in the activities of the Royal Institute and in architectural matters generally.

"Subscribers" will be entitled to use the Loan and Reference Library, to attend all General Meetings (except private Business Meetings) and to receive a copy of the Annual Report. They will not, however, be entitled to use in connection with their name or business any words or initials indicating that they are Members of or connected with the Royal Institute.

The annual contribution payable by a "Subscriber" will be £1 1s. The first payment will become due within two months of election and subsequent payments on the first of January each year. Subject to the additional payment of 12s. per annum, Subscribers will also receive post free the R.I.B.A. Journal, which is published fortnightly during the Session (November to June) and monthly during the recess.

The Council cordially invite applications from ladies or gentlemen who desire to be thus associated with the work of the Royal Institute, and the necessary nomination form can be obtained on application to the undersigned.

Ian MacAlister,
Secretary R.I.B.A.

FORTHCOMING EXHIBITIONS IN THE R.I.B.A. GALLERIES.

15 *to* 20 *June*.—Exhibition of the work of students at the Northern Polytechnic.

22 *to* 27 *June*.—Exhibition of drawings and photographs of the works of Sir Giles Gilbert Scott, R.A., LL.D., Royal Gold Medallist, 1925.

30 *June to* 4 *July*.—Exhibition of competitors' designs submitted in the Competition for the Royal Hospital School, Holbrook, Nr. Ipswich.

BILLS OF QUANTITIES IN THE EAST.

The Council of the Royal Institute have had their attention directed to the inadequacy and indeed the general incompetency shown in the quantities frequently supplied to contractors for public works to be carried out in India, Ceylon, China and the Straits Settlements. They desire to draw the attention of Members to the fact that the Standard Method of Measurement, drawn up by the Surveyors' Institution in collaboration with the Contractors' associations is suitable for application to much of the more important building work in the East, and recommend the adoption of this method for such work.

It is not suggested that the Standard Method of Measurement should be applied to the smaller building works where local or native methods of construction are employed.

WARNING TO MEMBERS.

Information has been given to the effect that a man describing himself as an Architect and Surveyor is calling on Members in South Coast towns and offering to negotiate work on their behalf in return for a weekly salary. Members are warned against having any dealings with this individual and are asked to communicate with the R.I.B.A. should they be approached in the matter.

IAN MACALISTER,
Secretary R.I.B.A.

PRIZES AND STUDENTSHIPS.

THE TITE PRIZE, THE SOANE MEDALLION AND THE OWEN JONES STUDENTSHIP.

The attention of intending competitors is called to the fact that the closing date for applications for admission to the Preliminary Competitions for the Tite Prize and the Soane Medallion is 15 June, and the closing date for applications for admission to the competition for the Owen Jones Studentship is 1 July.

Competitions

WOLVERHAMPTON AND STAFFORDSHIRE HOSPITAL.

Proposed out-patient and casualty department, to be erected in Cleveland Road, Wolverhampton. Assessor, Mr. T. R. Milburn, F.R.I.B.A. Premiums £200, £150, and £100. Last day for questions, June 27th. Designs to be sent in not later than September 5th, 1925. Conditions obtainable by depositing £1 0 0.

CAERPHILLY WAR MEMORIAL COMPETITION

The Competitions Committee desire to call the attention of Members to the fact that the conditions of the above competitions are not in accordance with the Regulations of the R.I.B.A. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime Members are advised to take no part in the above competitions.

UGANDA RAILWAY, NEW OFFICES, NAIROBI

Information has been received from the Chief Engineer, The Crown Agents for the Colonies, 4, Millbank, Westminster, S.W.1, that according to advices received by last mail from Nairobi the first premium of £200 has been awarded to the design submitted by F. Gordon McIntosh, Architect, 222, St. Andries Street, Pretoria, South Africa, and the second premium of £100 to the design submitted by C. A. Thomas and Herbert Jones, Architects, Salisbury Chambers, Wind Street, Swansea, South Wales.

GOWER R.D.C. HOUSING COMPETITION.

Members of the Royal Institute of British Architects must not take part in the above competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

PROPOSED EXTENSION TO THE SHIREHOUSE, NORWICH.

Closing date for receiving designs 1 July 1925. Assessor, Mr. Godfrey Pinkerton, F.R.I.B.A. Premiums £150, £100, and £50. Apply to the Clerk of the County Council, Shire Hall, Norwich.

COMPETITION FOR A HIGH BRIDGE OVER COPENHAGEN HARBOUR.

Copenhagen Municipality hereby invite participation in an International Competition in connection with a High Bridge over Copenhagen Harbour.

The Municipality have set apart a sum of 35,000 kroner to be expended in prizes. There will be three prizes, the value of which will be fixed by a Judgment Committee consisting of Members of the Council, together with technicians chosen by the Municipality, the (Danish) Institute of Civil Engineers and the (Danish) Society of Architects. The largest prize will be at least 15,000 kroner.

Programme and particulars in Danish and English can be procured after 1 February 1925, from the City Engineer's Office, Town Hall, Copenhagen B, against a deposit of kr. 100.

The deposit is repayable after the judging, or previously if the drawings, particulars, etc., are returned in good condition. Projects to be delivered to the City Engineers Directorate, Town Hall, before mid-day, 1 September 1925.

After judgment the competing projects will be publicly exhibited at the Town Hall, Copenhagen.

LEAGUE OF NATIONS.

COMPETITION FOR THE SELECTION OF A PLAN WITH A VIEW TO THE CONSTRUCTION OF A CONFERENCE HALL FOR THE LEAGUE OF NATIONS AT GENEVA.

The League of Nations will shortly hold a competition for the selection of a plan with a view to the construction of a Conference Hall at Geneva. The competition will be open to architects who are nationals of States Members of the League of Nations.

An International Jury consisting of well-known architects will examine the plans submitted and decide their order of merit.

A sum of 100,000 Swiss francs will be placed at the disposal of the Jury to be divided among the architects submitting the best plans.

A programme of the competition will be ready in February, 1925, and will be despatched from Geneva so that Governments and competitors may receive copies at approximately the same date. Copies for distant countries will therefore be despatched first.

The British Government will receive a certain number of free copies. These will be deposited at the Royal Institute of British Architects, and application should be made to the Secretary, R.I.B.A., 9, Conduit Street, W.1, by intending competitors.

Single copies can be procured direct from The Secretary-General of the League of Nations at Geneva, for the sum of 20 Swiss francs, payable in advance, but will not be forwarded until after the Government copies have been despatched.

On the nomination of the President of the Royal Institute, Sir John Burnet, A.R.A., has been appointed as the British representative on the Jury of assessors.

THE NEW INSTITUTE FOR THE BLIND, BUENOS AIRES, ARGENTINE REPUBLIC.

An International Competition has been promoted for the Argentine Institution for the Blind, Buenos Aires, Argentine Republic.

A small number of copies of the Conditions have been deposited in the R.I.B.A. Library for the information of British Architects who may desire to compete.

A booklet containing the full text of the conditions with other information (translated from the Spanish) and a plan of the ground on which the Institution is to be erected is available for inspection at the Department of Overseas Trade (Room 42), 35 Old Queen Street, London, S.W.1.

COALVILLE PUBLIC BATHS COMPETITION.

The President of the Royal Institute of British Architects has nominated Mr. Alfred W. S. Cross, F.R.I.B.A., as assessor in this competition.

Members' Column

THE LEEDS SCHOOL OF ART.

SCHOOL OF ARCHITECTURE.

Applications are invited for the post of Junior Lecturer and Instructor in Studio Design Classes. The candidate appointed will be required to take charge of studio and lecture work connected with junior courses, under the guidance of the Head of the School of Architecture.

Candidates should be associates of the R.I.B.A. and hold the qualifications of a "recognised" architectural school.

Salary in accordance with standard scales for Schools of Art. The selected candidate will be required to take up his duties as soon as possible.

Forms of application, which may be obtained from the undersigned, should be returned not later than 18 June.

JAMES GRAHAM,
Director of Education.

Education Office,
Calverley Street, Leeds.

APPOINTMENTS VACANT.

Two Assistant Architects are required in Public Works Department, Municipality of Shanghai. Preference will be given to Associates of the R.I.B.A. Candidates must be thoroughly trained Architects and should have had experience in the planning, designing and supervision of the erection of Public Buildings. Age limit, 25 to 30 years, and preferably unmarried. Salary about £60 per month. Further particulars can be obtained on application to the Secretary R.I.B.A., or to Messrs. John Pook and Co., 68, Fenchurch Street, E.C.3.

A FIRST-CLASS ASSISTANT is required in a London Architect's office. An intimate knowledge of the constructional details of schools is essential.—Apply, stating experience, to Box 7525, c/o The Secretary R.I.B.A., 9, Conduit Street, London, W.1.

APPOINTMENTS WANTED.

EXPERIENCED ASSOCIATE with some capital, aged 38, wishes to meet Architect in the South of England who requires an energetic partner; or would manage a branch office in a provincial town.—Reply Box 5925, c/o The Secretary R.I.B.A., 9, Conduit Street, W.1.

ARCHITECT'S ASSISTANT, disengaged, experienced in all branches of professional practice and office routine, keen, energetic and rapid draughtsman. Has lately been engaged as senior assistant on one of the City's largest modern buildings. Able to supervise and carry through large competitive projects, working drawings, or sketch designs.—Reply Box 5025, c/o The Secretary R.I.B.A., 9, Conduit Street, W.1.

ARCHITECT'S ASSISTANT, disengaged, experienced in the preparation of working drawings, details, etc. (domestic and ecclesiastical), surveying old buildings, levelling, draft specifications, etc., with good general office routine.—Reply Box 8023, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

PARTNERSHIPS WANTED.

A.R.I.B.A., with use of West End office and 'phone, which would remain available, desires partnership in well-established practice in or near London. Trained in recognised Architectural School, and has had wide office experience in London and the provinces. Would invest capital if prospects were sufficiently good. Testimonials.—Reply Box 8625, c/o The Secretary R.I.B.A., 9, Conduit Street, W.1

A.R.I.B.A. (Public School), with small practice, desires to purchase £500 per annum share in well-established London firm. Highest references; keen and hard worker.—Box 2955, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

ARCHITECT, age 44, with considerable experience in domestic work, is desirous of obtaining a partnership in well-established firm of architects, not London. Capital available.—Apply Box 1165, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

ASSISTANCE OFFERED.

A.R.I.B.A. with own established town and country practice, having less work in average year than he can get through, desires to meet with London architect who has rather more than he can manage, with view to sharing expenses and rendering assistance at busy times on moderate terms. Would guarantee three to four days' assistance per week. References exchanged.—Box 2555, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

MR. FRANK H. HEAVEN [*A.*].

MR. FRANK H. HEAVEN, A.R.I.B.A., P.A.S.I., Cert. Royal San. Inst. (R.I.B.A. Grissell Gold Medal, R.I.B.A. Bossom Silver Medal, and Surveyors' Institution Prizeman), Chartered Architect and Chartered Surveyor, of 39 Coronation Street, Aberkenfig, Glam., has opened an office at No. 2 Church Street, Cardiff, and will be pleased to receive trade calls and catalogues at that address.

MR. E. FIANDER ETCHELLS.

MR. E. FIANDER ETCHELLS, Hon. A.R.I.B.A., has been elected President of the Association of Architects, Surveyors and Technical Assistants.

CHANGE OF ADDRESS.

MR. STANLEY WAGHORN [*A.*] has changed his address from 8 King William Street to 9 Adam Street, Adelphi, W.C.2. Telephone Gerrard 8093.

BOOKS WANTED.

WANTED by A.R.I.B.A., secondhand (latest editions) books on Town Planning by Raymond Unwin, by Haverfield, by F. L. Thompson, by H. Inigo Triggs, and by Hughes and Lamborn, and Essentials of Composition by Van Pelt.—Apply Box 7625, c/o The Secretary R.I.B.A., 9, Conduit Street, London, W.1.

ROOMS TO LET.

AN ARCHITECT has one room to let in the Temple. Joint use of the telephone.—Apply Box 1065, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

Minutes XV

SESSION 1924–25.

At a Special General Meeting held on Monday, 8 June 1925, at 8 p.m., Mr. J. Alfred Gotch, F.S.A., President, in the chair. The attendance book was signed by 10 Fellows (including 4 Members of the Council), 6 Associates (including 1 Member of the Council), and 4 Licentiates.

The Minutes of the Special General Meeting held on 2 March 1925 having been published in the JOURNAL, were taken as read, confirmed, and signed by the Chairman.

The President having announced that the meeting had been summoned for the purpose of considering the Council's proposals for the amendment of Bye-Law 29, with regard to the representation of Dominion Allied Societies on the Council, and the addition of the Chairmen of the four Standing Committees, it was RESOLVED :

(1) That Bye-Law 29 (*d*) be amended by the addition of the following words :

" Provided always that in the event of the representative nominated by any such Society being absent from the United Kingdom such Society shall be entitled to nominate a member of the Council of the Royal Institute for the time being who is practising in the United Kingdom to represent it upon the Council during the absence of the representative first so nominated as aforesaid."

(2) That Bye-Law 29 be amended by the addition of the following words after paragraph (*g*) :

" (*h*) The Chairman for the time being of each of the four Standing Committees referred to in Bye-Law 52."

(3) That the necessary steps be taken to obtain the sanction of the Privy Council to such additions to Bye-Law 29 as are required to give effect to these resolutions.

The Special General Meeting then terminated.

At the Fifteenth General Meeting (Business) of the Session, 1924–25, held on Monday, 8 June 1925, immediately after the Special General Meeting above recorded, and similarly constituted, the Minutes of the meeting held on 18 May 1925 having been published in the JOURNAL, were taken as read, confirmed and signed by the Chairman.

The Hon. Secretary announced the decease of the following members :—

Mr. Donn Barber, of New York, elected Hon. Corresponding Member, 1922.

Mr. Alan Keith Robertson, elected Licentiate 1911.

Mr. Leonard Robert Stains, elected Licentiate 1912.

It was RESOLVED that the regrets of the Institute for their loss be entered on the Minutes, and that a message of sympathy and condolence be conveyed to their relatives.

The following members attending for the first time since their election or transfer were formally admitted by the President :

Mr. Robert J. McBeath, Fellow.

Mr. Fred Thorpe, Licentiate.

The following candidates were elected to membership by show of hands under Bye-Law 10 :—

AS FELLOWS (14).

ADAMS : PERCY TIDSWELL [*A.* 1909], Colombo, Ceylon.
BEST : HALSTEAD [*A.* 1925], Blackpool.
DUNN : HERBERT HENRY [*A.* 1896], Cambridge.
GLENCROSS : LESLIE HAROLD [*A*, 1919].
GUTHRIE : LEONARD ROME, M.C., M.R.I. [*A.* 1910].
HOBSON : CAPTAIN JOSEPH REGINALD, M.C. [*A.* 1907], Salisbury, Rhodesia.
HOLT : HAROLD GUY [*A.* 1908].
SWANNELL : CHARLES MALCOLM [*A.* 1911].
THOMPSON : MORRIS [*A.* 1910], Doncaster.
TRENCH : GILBERT MACKENZIE, F.S.I. [*A.* 1908].
WALKER : EDWARD HOLSWORTH [*A.* 1906], Doncaster.
WALKER : MARSHALL EYRE [*A.* 1911].
WARD : BERNARD MICHAEL [*A*, 1906], Liverpool.
WELCH : ROLAND [*A.* 1908].

AS ASSOCIATES (5).

ASHBURNER : EDWARD HEATHCOTT, B.Arch.Liverpool, Warrington.
BLOODWORTH : CHARLES THOMAS, B.Arch.Liverpool, Liverpool.
JENKINS : WILLIAM VICTOR, B.Arch.Liverpool, Wallasey.
MAW : SAMUEL HERBERT, Montreal, Canada.
VELARDE : FRANCIS XAVIER, Higher Bebington.

AS HON ASSOCIATES (4).

DEARMER : THE REV. PERCY, M.A., D.D., Professor of Ecclesiastical Art and Lecturer in Art, King's College, University of London.
EARLE : SIR LIONEL, K.C.B., K.C.V.O., C.M.G., J.P.
SHAW : EVELYN CAMPBELL, M.V.O.
TURNER : LAURENCE ARTHUR, F.S.A.

The Secretary announced that by a resolution of the Council the following had ceased to be members of the Royal Institute :

ASSOCIATES.

M. H. C. Doll, S. M. Fairlie ; G. Fox ; G. A. Gale ; Sir T. D. Rhind ; F. R. Smith ; J. F. Wilson.

LICENTIATES.

A. L. Belcher ; R. T. Davey ; G. Gould ; E. H. H. Griffith ; W. P. Holgreaves ; A. C. Hunt ; W. Langley ; W. Macpherson ; R. P. Oglesby ; J. B. Orwin ; A. C. Scott ; T. K. White.

The Scrutineers' Reports, giving the results of the Annual Elections of the Council, the Standing Committees, and the Hon. Auditors were read. The President declared the Officers, Members of Council and Standing Committees, and Hon. Auditors duly elected in accordance therewith.

Two candidates for the Practice Standing Committee having received an equal number of votes, a ballot was held, as a result of which Mr. Francis Jones was elected.

On the motion of the President, a vote of thanks was passed by acclamation to the Scrutineers for their labours in connection with the elections. The proceedings closed at 8.40 p.m.

It is desired to point out that the opinions of writers of articles and letters which appear in the R.I.B.A. JOURNAL must be taken as the individual opinions of their authors and not as representative expression of the Institute.

R.I.B.A. JOURNAL.

Dates of Publication.—1924 : 8th, 22nd November ; 6th, 20th December. 1925 : 10th, 24th January ; 7th, 21st February ; 7th, 21st March ; 4th, 25th April ; 9th, 23rd May ; 13th, 27th June ; 18th July ; 15th August ; 19th September ; 17th October.

THE LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

J. ALFRED GOTCH, HON. M.A. (OXON.), PRESIDENT R.I.B.A., JUNE 1923—JUNE 1925

FROM A PAINTING BY T. C. GOTCH, R.I.

VOL. XXXII. No. 16 27 JUNE 1925

The Royal Gold Medal

PRESENTATION TO SIR GILES GILBERT SCOTT, R.A., LL.D., AT THE GENERAL MEETING, MONDAY, 22 JUNE 1925

(THE PRESIDENT, MR. J. ALFRED GOTCH, HON. M.A (OXON.), IN THE CHAIR.)

THE PRESIDENT : Ladies and gentlemen, component parts of a most distinguished audience, I think you will agree with me that anyone of a well-balanced mind and of a modesty of disposition such as distinguishes the hero of this evening will be best pleased if he is not long held in embarrassing suspense while a list of his virtues and his achievements is given. Therefore I do not propose to indulge in a long disquisition upon the works of Sir Giles Gilbert Scott. But this, I think, may be said : that he is one of a long line—or shall we say dynasty ?—of architects, and perhaps I may say without being accused of plagiarism that he is one of two men who, hardly out of their teens, have adorned Liverpool with two of its most distinguished buildings ; one, St. George's Hall, civil in its character, the other the Cathedral, ecclesiastical. It is of interest to remember that Sir Giles Scott's grandfather was one of the early recipients of the Gold Medal, at a date so long ago that I am sure it is beyond the experience of any of those who are present, namely, 1859. And in subsequent years he was the Institute's President.

Following the hint which I have already given, I do not propose to enlarge upon Sir Giles Scott's works. Only two will I mention out of a long series which would themselves have entitled him to be the recipient of our Gold Medal. At Clare College, Cambridge, he has given us an example of scholarly architecture, and in Liverpool Cathedral he has given an example of fine ecclesiastical work. I think those who have seen it will agree with me in saying that, so far as it has gone, at present, it presents as much interest and artistic enchantment as any of our old cathedrals that we love so well. It has this further distinction : that there are presented in its erection problems of construction which either never came before the ancient builders or were avoided by them. To have designed Liverpool Cathedral is a distinction which, alone, would entitle any architect to receive our Gold Medal, and, in a moment, I shall have the greatest possible pleasure in asking Sir Giles Gilbert Scott to accept the Medal. Before actually coming to that interesting part of the ceremony, however, I would ask one of our American brethren who have favoured us on this occasion with their presence, to say a few words in regard to the subject of this evening. It is not often that we are favoured with the presence of two eminent representatives of our art from America, and I think it would be a pity on this occasion not to take advantage of their presence. So that, at whatever inconvenience or embarrassment to Mr. Cass Gilbert, I will ask him to say a

few words before I actually present the Gold Medal.

MR. CASS GILBERT (Hon. Corresponding Member): It is with much embarrassment, and yet with a peculiar pleasure that I accepted, only a moment ago, the invitation which the President sent down to me after I took my seat, to say a few words in regard to the award of the Royal Gold Medal to Sir Giles Gilbert Scott. Reminiscences are, perhaps, not in order, but I may say that when I first came to London forty-five years ago, Sir George Gilbert Scott was then the great leading light. It is with a remembrance of Street, and Alfred Waterhouse, and Pearson and Burges and Norman Shaw, that I feel you are carrying on the tradition of the time when, it seems to me, England re-awoke to the beauty of its native style of architecture. Sir Giles Gilbert Scott is carrying on, as your President has said, a great tradition. I went to Liverpool last year for the special purpose of seeing his Cathedral, a design already well known throughout the world from many illustrations, and known to us and studied by us in America with, I might say, almost fervent affection. I was deeply impressed with its importance as a great work of art. It has that quality of combination of structure and form and beauty and colour, of vitality in detail and originality of plan which is not a copy of anything that exists. Yet for all that, it carries out the idea of a great Cathedral in a splendid, vital and original way. In carrying, as I hope I do, some of the tradition of the Anglo-Saxon race—for my people came from Devonshire 300 years ago—I want to say that I share also in the pride which you must feel in having another great architect among yourselves who can produce so vital and so beautiful a thing so thoroughly well done. It gives me the greatest pleasure to offer to the Royal Institute of British Architects my congratulations on their selection of Sir Giles Gilbert Scott as their Medallist, and my congratulations to him on the honour which you are bestowing upon him.

THE PRESIDENT: I feel that it is almost like dashing one's fist into the face of a baby to ask another of our American guests—who has only just arrived by aeroplane from Paris and very nearly missed his dinner in consequence—at a moment's notice to say a few words in relation to this most important and delightful subject. I will ask Mr. Everett Waid, the President of the American Institute of Architects, who honours us with his presence to-night, to say just a few words.

MR. EVERETT WAID: I should have been well content to keep silent after our country had been so well represented by the Past-President of the American Institute of Architects, one whom we honour for the long list of great works which he has done in our country. I should have been the more willing to do so in that I have risked my life for the first time in an aeroplane. I felt that I could not miss this occasion; but hereafter I shall have more respect for precedent and take the train to the boat. I am glad to be here to see the Medal awarded, because I feel that every word which has been said is so well deserved by the recipient of the honour which is to be given to-night. I made a special trip a few days ago to Liverpool to see Sir Giles's magnificent work, and it far exceeded my expectations. In Paris, where I have been to the Exposition, it appeared to me that a great effort has been made, as have similar efforts in my own country in past years, to achieve something great in architecture by doing something eccentric, believing that greatness in design is a complete departure from all precedent. But I feel that in Liverpool Cathedral we have a masterpiece which breathes the spirit of art with respect to tradition.

SIR GILES GILBERT SCOTT was then invested with the Royal Gold Medal

SIR GILES, in reply, said: I am sure you will agree with me that brevity is the motto for to-night, and I do not propose to say many words. But brevity may be carried a little farther, perhaps, than is customary, and I should like very much, if I might, to follow a distinguished precedent and say two words. I have really only to say "Thank you!" and to say it with all my heart. Sixty-six years ago a distinguished forbear of mine, my grandfather, received the Gold Medal—I do not think the Institute inhabited these premises at that time—I am told that it held its meetings in a room attached to a "pub." I do not know whether that is true, but I like to contemplate the idea of my grandfather receiving his Gold Medal in a public house!

I always think that His Majesty's Gold Medal is an honour which the profession is exceptionally proud of. I do not know whether similar honours are given to other professions and arts, but I think

that the architectural profession is particularly distinguished in receiving this recognition of their art from the hands of the King, or the Queen, as the case may be. It is to me especially a great honour to receive this Medal of his Majesty on the recommendation of my brother architects, for I do not think there is a greater honour than to have the recognition of one's brother architects.

I do not know whether it is the Cathedral or the telephone-box which is responsible for this award. I do not think the telephone-box design is so well known ; soon it will be better known. I am afraid 40,000 of these things are going to be spread about the towns of the country. Imagine 40,000 Liverpool Cathedrals ; it would be terrible.

It gives me very great pleasure to say " Thank you ! " with all my heart for what Mr. Cass Gilbert and Mr. Everett Waid have said to-night. I have a great admiration for American architects and American architecture ; I think their work is wonderful. It was a great sorrow to me when my friend Bertram Goodhue, who was responsible for most of the ecclesiastical architecture of recent times in American, died. The words of Mr. Cass Gilbert and Mr. Waid give me encouragement to go on with the next section of the Cathedral, which we hope to start in July this year and which will comprise the central space and, I hope, the next pair of transepts.

I think the Gold Medal is usually regarded as the climax to an architect's career, but I don't like to think it is the climax of my career. I am full of hope that I shall be able to do a little more work before I pass away.

MR. E. GUY DAWBER (President-Elect) : Before we part to-night I have one very pleasant duty to perform, and that is, to ask you to pass a vote of thanks to our retiring President, Mr. Gotch. Mr. Gotch, for two years, has occupied the chair with distinction in every possible way ; his addresses have been masterly expositions expressed with the felicity and clearness which was to be expected from one of the most scholarly writers of our time on the history of English Renaissance architecture, and he has conducted the work of the Institute in a way that we shall never forget. I therefore ask you to pass to him a hearty vote of thanks.

The vote was passed by acclamation.

THE PRESIDENT : I rise with singular embarrassment, because I had not the slightest idea that anything of this kind was going to take place. But I thank you for the very kind way in which you have received Mr. Dawber's remarks, and I can only say that whatever success has attended the period during which I have occupied this presidential chair, it is owing to the kindness and the devotion to duty of the Council and the members of the Institute. The whole of the period during which I have presided over this Institute has been distinguished for the genuine endeavour of all concerned to forward the interests not only of the Institute itself, but of architecture as well, and I shall always look back with the very greatest pleasure to the period during which I have performed these duties, which, I may say *en passant*, are becoming more and more arduous as the years go by. I thank you, ladies and gentlemen, for the very kind way in which you have received this vote.

Recent Developments in Apartment Housing in America

BY WILLIAM T. BENSLYN, A.R.I.B.A., A.R.C.A. (GODWIN BURSAR, 1923)

FIG. 28.—MAIN ENTRANCE COLONNADE, LEXINGTON AVENUE, THE SHELTON, NEW YORK
Arthur Loomis Harmon, Architect

THE principal advances which are being made in the design of apartment houses in America appear to be due to the following causes.

Architects are giving very close attention to economics, especially to the analysis of building costs in their relation to land values, and are demonstrating to real estate speculators that first-class design and original thought pay. Instead of adopting accepted ways of doing things without investigation, they are arriving at better solutions of old problems by thinking them out afresh from first principles. They approach new problems from the standpoint of the logical analysis of possibility. Although the detail employed is largely of traditional origin, the mass and scale of the buildings on which it is used are directly influenced by modern construction and requirements.

A human dwelling remains a human dwelling, whether a cave, cottage or apartment, but the possibilities of modern mechanical science have enabled the latter to assume a very distinctive type of expression. The adoption of all kinds of labour-saving devices and fittings, leads to great compactness of planning, although rooms are in many cases smaller than those for similar purposes in England, the effective space is as great owing to the employment of standardised fittings and the careful consideration of their position in relation to furniture, doors, windows, etc. The general use of central heating simplifies planning by the elimination of smoke-flues from the majority of the rooms, although the social value of the open fire is appreciated and the better class apartments have at least one in the living-room. The use of elevators in all apartments over five storeys is common. Their number and position are two of the most important factors in the design. In the most expensive apartments, each elevator serves only one or at most two entrance foyers per floor. In the less expensive elevators serve a public corridor from which three or more apartments are entered at each floor. The relation of initial to recurring cost is closely studied, especially in buildings which are owned co-operatively or by the large holding corporations. This remark does not apply to those built by speculators for sale. This question is considered from the point of view of saving in labour and service as well as upkeep and repairs.

Good management and efficient service are two of the factors in the success of apartments which cannot be con-

trolled by the architect; but in America there seem to be numerous persons who specialise in the running of these buildings, the result being that the large loaning companies are willing to finance schemes up to 66 per cent. of their cost and to make loans of as much as 2,000,000 dollars on a single scheme. The rate of interest varies from 5½ to 6½ per cent., but there is apparently no lack of promoters who are willing to commission architects to tackle schemes on a big scale.

Apartment houses are divided into two classes: (1) house-keeping apartments, and (2) apartment hotels which are either entirely or mainly composed of non-house-keeping apartments. I include typical examples selected from those which came under my notice during the seven weeks I spent in America. I visited New York, Philadelphia, Baltimore, Washington, Chicago, Cleveland and Boston. In all of these cities I was given opportunities to see the latest schemes executed, also buildings in course of erection as well as plans of projected schemes.

Apartments of all classes erected in New York must comply with the provisions of the New York Tenement Housing Act 1901. In order to understand the problem as it exists to-day, it is necessary to investigate the conditions which led to the passing of this Act. In the early days of New York, it was found convenient to split up city blocks 800 by 200 feet into building lots of 100 by 25 feet. When these were used for single family residences and a reasonable portion of each lot left unbuilt on, there was no objection to such dwellings, but as land became more valuable, the tendency even in good class dwellings was to crowd too much building on to the lot, making it impossible to light the interior effectively. As the city developed, the more fashionable residential district moved northward and the sites of the earlier private residences were used for tenement houses. The 100 by 25 foot lot thus became the standard size of building lot on which to erect a tenement house. The vital importance of light and air to human life was almost entirely disregarded. Hundreds of tenements were built, both of the "railroad" and "dumb-bell" type. In the former, only those rooms facing the street or the yard across the back of the site had windows. In the latter, the internal rooms had windows looking on to areas only 4 feet wide and often five storeys high. Four families were usually accommodated on each floor, a common staircase and sanitary conveniences being planned in the middle of the site. The living conditions in such tenements can only be described as abominable, and it is impossible to estimate the extent of the ill-effects from disease and lowered vitality caused by them. One of the first trained architects to take an interest in this problem was Mr. Ernest Flagg, who in 1894 wrote in the July number of *Scrivener's* an article under the title of "The New York Tenement House Evil and its Cure." In this he demonstrated clearly that the long and narrow site is one of the most wasteful shapes for such buildings owing to the greater length of outside walling required to enclose the same area arranged as an oblong than as a square and to the great amount of unrentable space in communicating corridors. He produced plans for sites 100 by 50, 100 by 75, and 100 by 100 feet, which compared with the "dumb-bell" type for similar sites provided the same amount of accommodation at 15 per cent. less cost and with reasonable light, air and privacy for all rooms. As far as one can ascertain, this was the first attempt to demonstrate the value of the application of scientific planning and analysis to the design of tenements. The 1901 Act, besides enforcing good standards of construction, deals with cubic air space in rooms, fire-escapes, sizes of windows, etc., and lays down a ratio between the area of the lot which may be built on and that which must be left vacant. In the case of the lots with only one street frontage 70 per cent. of the total area may be covered with buildings, but on corner lots this percentage is increased to 90 per cent. The intention was to fix a minimum unbuilt on area for each lot, but in practice it has been regarded as a maximum. Designs showing typical ways of dealing with sites of various sizes are illustrated later. In some of these, the owners have insisted on the architect covering the maximum area allowed by the Act. The results are not ideal but the best which can be obtained under the conditions. Rear apartments especially are only moderately lighted and ventilated except when they happen to overlook particularly favourable adjoining sites occupied by churchyards, school-playgrounds, etc. The disadvantages inherent in the development of small individual lots, especially in regard to the outlook from rear apartments, have long been realised, and schemes based on the development of a complete city block are becoming more common. In connection with housing for the middle and working classes in New York, Mr. Andrew J. Thomas has given great attention to the question of the proportion of a site which it is profitable to leave unbuilt on. In order to demonstrate his views on this point, Mr. Thomas prepared a plan for the New York State Housing Committee showing the development of a New York city block with garden apartments so planned that they only occupied 37½ per cent. of the total area. He also prepared figures showing that, compared with the usual apartments built to occupy 70 per cent. of the site, they would show a net income of 7·5 per cent. as compared with 6·9 per cent. The plan itself is of interest, as it consists of a number of U-shaped blocks arranged around a long internal garden, the blocks are separated from each other by passages which serve as entrances to the garden and permit the free circulation of air.

In planning his garden apartments at Jackson Heights for the Queensboro' Corporation, Mr. Thomas has adopted a modification of this arrangement. These apartments, besides being well planned, are very pleasing in their architectural treatment. They are intended for the middle classes. At garden level, the small courts of each block are occupied by garages on to the roofs of which the external fire-escapes discharge. The setting back of the houses, leaving a grass-covered space between them and the sidewalk, is a pleasant feature which is seldom seen in New York. The plans given (Figs. 1 and 2) illustrate slightly differing arrangements for a 120 feet and a 107 feet unit. In both instances there are two staircases, each serving a large and small apartment at each storey. The simple rectangular shape of the blocks is economical in building on account of the absence of small breaks. Internally, it gives rooms without awkward corners in which it is possible to arrange furniture satisfactorily. It will be

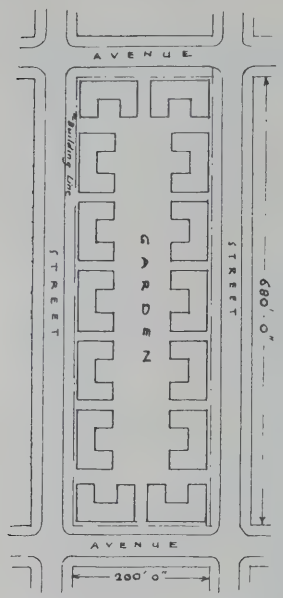


FIG. 1
Andrew J. Thomas, Architect

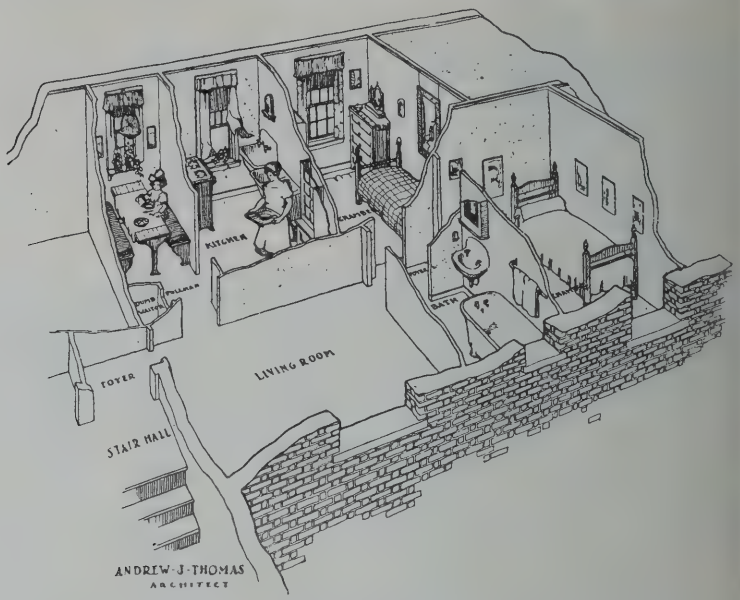


FIG. 2.—TYPICAL WORKING CLASS APARTMENT HOUSE UNIT, NEW YORK CITY

FIG. 3.—ENTRANCE APARTMENTS, JACKSON HEIGHTS, N.Y.
Andrew J. Thomas, Architect

noticed that these plans give good cross ventilation. The small loggias at the angles of the blocks are a pleasant feature of Western origin, they can be thrown open in summer-time or closed, as shown, in winter time. The photograph shows the restrained treatment of the elevations which are carried out in wine-coloured brickwork (Fig. 3). Although architectural features are almost entirely absent, these apartments have a breadth and simplicity reminiscent of Italian work of the earlier periods.

The Metropolitan Life Insurance Company's housing scheme in the Astoria suburb of New York is an example of the application of similar principles of planning to tenement housing. After the war, a law was passed permitting insurance companies to invest up to 10 per cent. of their assets in building. This company decided to devote 100,000,000 dollars to housing investments. They commissioned Mr. Thomas to design fifty tenement houses, the rentals of which were not to exceed $9 per room per month, including the provision of steam heating, hot water, and electricity. These rentals are much lower than for similar privately owned apartments. The rate of interest on the capital invested was fixed at 5½ per cent. and notwithstanding the low rentals, the apartments are so designed that it will be possible to maintain this rate. These houses are intended as substitutes for the ordinary tenements erected on city blocks, only 50 per cent. of the site is covered with buildings instead of 70 per cent., as allowed by law, and yet these apartments, owing to the economies made possible by planning for complete blocks instead of individual blocks, will show an equally good return on the capital invested. The typical block plan (see Fig. 1) shows twelve U-shaped houses arranged on a site 600 by 200 ft.; the solid ends face the street and the open ends a garden 36 feet wide running the whole length of the

site. The courts separating the houses are 14 feet wide at their narrowest and 18 feet at their widest point. Fire escapes are placed in these courts and the internal angles of the open court of each house. The ground and typical floor plans read in conjunction with the block plan serve to illustrate the following important points of planning :—

1. Correct and economical placing of staircase.
2. Elimination of waste space in corridors.
3. Economic shape of rooms, relation of wall spaces to fittings, etc.
4. Grouping of fire escapes.
5. Use of space between blocks for light to subsidiary rooms and for air circulation between blocks.
6. Grouping of small individual areas into large inner court which opens out into the individual courts of the U-shaped block units.

This scheme is a notable attempt at a solution of the problem of tenement housing in its most difficult form. A minimum of four rooms per apartment has been fixed, the accommodation comprises living-room, dining-room or dining-recess, kitchen, one or two bedrooms and bathroom,per apartment (see Fig.2). Each house has five storeys and accommodates thirty-nine families. The basements are restricted to the width of the block immediately adjoining the street, the method of excavating being to run a steam shovel along both of the long sides of the site, each house has its own heating apparatus and fuel store located in its basement. All the roofs are flat and advantage is taken of this by using them as clothes-drying spaces. The elevations are very simple in character but a beautiful brick of brownish-yellow colour obtained from Holland, has been used. Mr. D. Everett Waid, the architect to the Metropolitan Life Insurance Company, has been associated with Mr. Thomas in the carrying out of this work.

Although the schemes already mentioned show a great advance on planning for small individual lots, they are confined to solutions for standard size New York city blocks. The question of the advisability of cutting up all land into such blocks by streets of the regulation town size is now receiving attention, and the cost of roads in relation to land development studied. Outside New York, there appears to be a greater tendency to treat each site on its merits and to keep the cost of land development lower by the use of cheap roads for secondary circulation with paths for foot traffic only instead of keeping the whole of the roads similar to town streets.

The " Black Rock " War Housing Scheme at Bridgeport, Connecticut, was carried out for the U.S. Government by Mr. R. Clipstone Sturgis of Boston. It is an excellent example of an apartment housing scheme which combines good design of the apartments themselves with a well thought out development of the land on which they are built. There is ample sunshine, light and air everywhere, and where trees occurred they have been carefully preserved. Apartments of three, four and five rooms were required, and three unit types of houses were designed, all three storey buildings with cellars. Each type has two apartments to each storey, planned with a central front staircase and a rear staircase immediately behind it which avoids the necessity for external iron fire escapes. The houses containing the four and five-room apartments are simple oblongs, which as examples of direct planning will be extremely difficult to improve upon. In spite of the limited nature of the accommodation, the kitchen, private and reception sections are sufficiently isolated whilst giving convenient service. The three-room apartments have been arranged cleverly to combine the advantages of planning some rooms in relation to the sides and others to the diagonal of a square, forming a special unit for use at corners which is especially useful at those which are not right angles. The block plan shows the variety of arrangement which can be obtained by the use of those three unit types, in all cases the rooms have ample light and air besides a pleasant outlook. Forty families are accommodated per acre. Economy has been studied throughout, but there is no unpleasant effect of standardisation, the elevations are greatly helped by the use of classical detail for the entrance porches. Apart from the keystones and arched heads of the well-proportioned sash windows they are the only features used to break the expanse of plain brickwork. Projecting porches in wood are provided at the rear of all types of house; besides being a pleasant feature they are found useful for drying clothes. Flat roofs are used throughout finished against low parapets. There are no fireplaces and the whole of the buildings are heated from a plant located in a separate building, but provision could be made for the installation of heating plants in the basements of individual groups should they be converted to private ownership.

Some of the most original and successful apartments for the middle-classes are found in Baltimore, Ohio, where Mr. Clyde N. Friz has carried out a number of schemes which, besides being good architecturally, are particularly clever solutions of difficult site problems. He has succeeded in building apartments which admirably fulfil the following conditions :—

(*a*) Produce an economic rental.
(*b*) Provide all reasonable modern conveniences.
(*c*) Are not expensive to run or keep up.
(*d*) Do not detract from the natural beauty of the site on which they are built.

The outskirts of Baltimore are being developed on good lines with a view to the preservation of natural beauty. The land which Mr. Friz chose for these apartments was practically undeveloped woodland which, on account of its awkward levels and secluded position, did not appeal to the ordinary real estate speculators. Being relatively cheap, there has been no necessity to crowd it unduly with buildings. His two first apartments were the Tuscany and Lombardy. The former has an interesting feature which solves the garage problem by placing a large garage in front of the building, but at basement level, and using its flat roof as a forecourt and Italian garden. The photograph (Fig. 4) shows the flank of the garage in relation to the building as a whole. The beauty of the site and the variety of levels are also shown by this photograph. A more recent group only just completed at the time of my visit are known as Garden Apartments. They are an interesting example of the adaptation of a courtyard plan to a

Fig. 4.—Tuscany Apartments, Baltimore. Clyde N. Friz, Architect

Fig. 5.—Garden Apartments, Baltimore. Clyde N. Friz, Architect

site which has a fall of 1 in 10 from north to south. The apartments are arranged in five separate houses, three of which are placed in relation to the higher and two to the lower level. The courtyard itself is 185 feet long by 100 feet wide, the shorter dimension being in the direction of the fall. It is entered through a gap which is left between the houses occupying the south side. The levels on either side of the entrance are such that it has been possible to arrange two apartments at basement level. The three remaining houses are placed one in the centre of the north side immediately opposite the entrance and the others on the east and west sides with their ends in line with the back of the centre block. By this means their entrances group with the terrace running across the north side of the courtyard. These houses are a storey higher than those on the south side and are linked together with loggias roofed at the level of the lower blocks. In addition to completing the quadrangle the loggias act as open-air porches for those apartments which immediately adjoin them. They are open both sides and serve to ventilate the courtyard by catching any breeze from whichever direction it may be blowing (Fig. 5). Each house has three storeys in addition to the basement, which is well lighted and devoted to stores and servants' rooms, but in some cases additional living rooms are provided with staircases to the ground floor apartments. Where garages are provided they occupy a portion of the basements opening on to yards which are screened by the loggias. There are two apartments to each storey served by a central staircase lighted from the open-air porches at first and second floor levels. A service staircase is also planned to each pair of apartments, an economy being effected by arranging one dumb-waiter and incinerator on the landing between each pair of kitchens. The plans, sections, elevations and photograph (Fig. 6) explain the points mentioned above; and the general plan, besides showing the lay-out, gives details of the arrangement at entrance and basement levels. These buildings possess much of the charm of the smaller Italian villas and farmhouses and show how successfully symmetry and informality can be combined (Fig. 7). Although the rectangular character of the blocks is maintained, there is no effect of monotony owing to the clever way in which the loggias and open-air porches give interesting light and shade to the design. There are no mouldings except round the main entrance doorways, but the common bricks used throughout have been covered with stucco which here and there covers a projecting course. The windows are

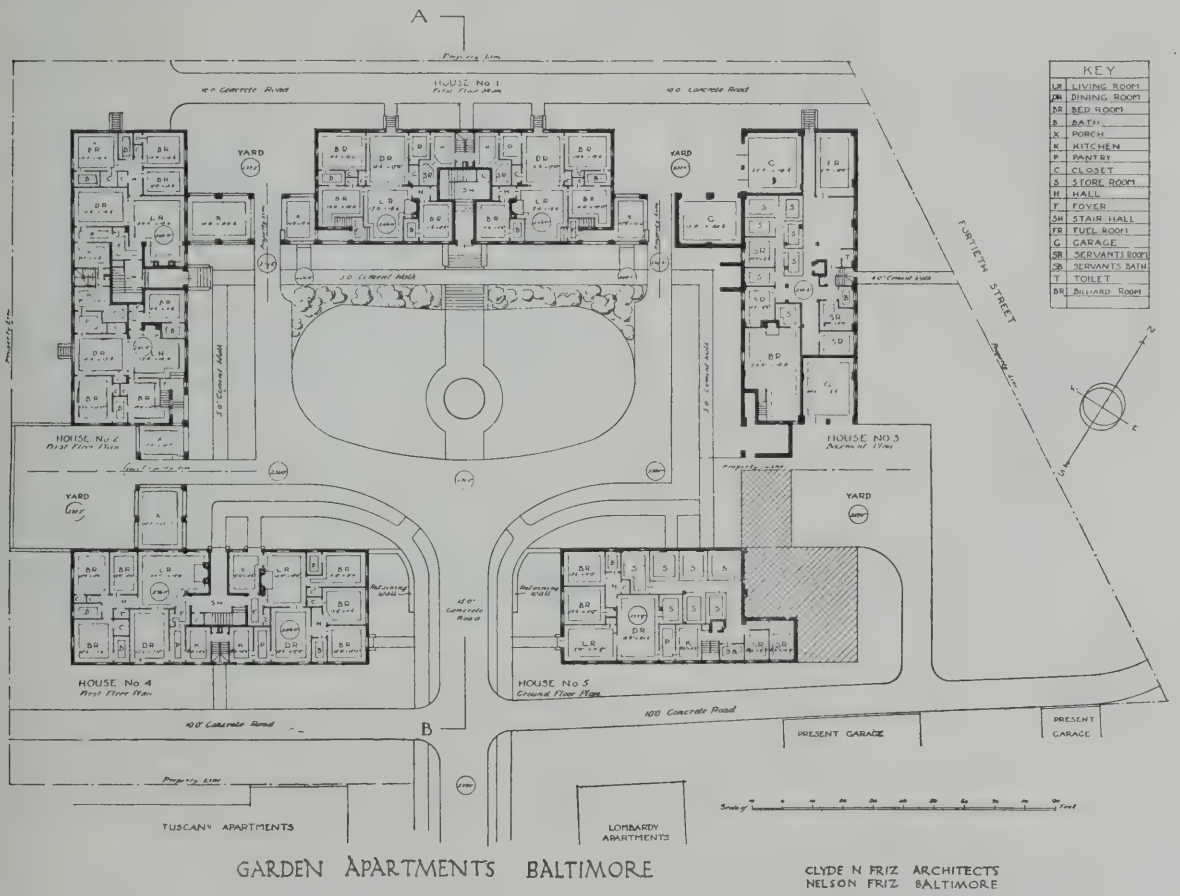


Fig. 6

inward-opening casements, the frames of which have a rebate on the outer face so that a gauze screen can be fixed during the mosquito season. The cost of construction was 48 cents per foot cube, the finish throughout being first-class. All floors are fireproof and the public passages and staircases are finished with red tiles. The attached schedule gives an idea of the financial side of this scheme.

Taking into consideration the difficulties of the site and the low cost of construction, one cannot speak too highly of the result obtained, which certainly charmed me as much as any apartments I saw in America.

especially for those living in New York. At the moment, the favourite localities for apartments of the highest class are Park Avenue and the upper part of Fifth Avenue. The rooms provided in these modern apartments are on the same scale as those in private houses of the highest class. Although the majority of wealthy New Yorkers now use an apartment as their working and winter residence, the family spending most of its time in the country, this has not always been the case. Formerly, there was considerable prejudice against apartments, but since it has been demonstrated that the same accommodation can be obtained with less cost in upkeep and service in an apartment than

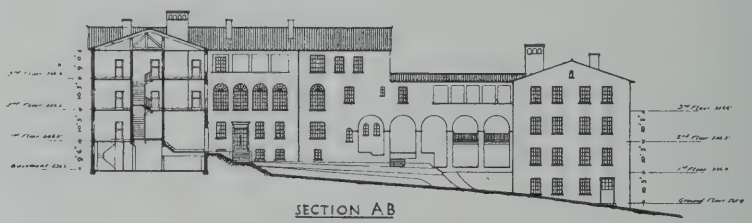


FIG. 7

BALTIMORE GARDEN APARTMENTS, No 1.
C. N. FRIZ, ARCHITECT.

Individual Ownership.

Investment (including ground)		$95,000·00
Financed as follows :—		
1st Mortgage	$47,000·00	
Stock	48,000·00	
		95,000·00
Income.		
Four (4) Stalls at $150.00	$600·00	
A-1 and B-1 at $3,000.00	6,000·00	
A-2 and B-2 at $2,750.00	5,500·00	
A-3 and B-3 at $2,500.00	5,000·00	
	$17,100·00	
Vacancies 10 per cent.	1,710·00	
Gross Income		15,390·00
Expenses.		
Interest	$2,820·00	
Taxes	1,000·00	
Janitor (one half-time)	500·00	
Coal	500·00	
Water, Light and Insurance	300·00	
Repairs and Incidentals	500·00	
	$5,620·00	
Sinking Fund	3,916·67	
		9,536.67
Net Income		$5,853·33

Having dealt with these examples of the apartments provided for the workers and middle classes, I will now give examples of those for the wealthier classes, more

in a first-class private house, they have become increasingly popular. In the older type of apartments erected as late as 1895, a large proportion of the site was taken up by staircases, lifts, passages and ineffective light courts, only those rooms facing the street being adequately lighted. The plan given shows a typical method of dealing with a site 100 feet by 100 feet, the only idea in the plan being to plan one long and narrow apartment on each 100 feet by 25 feet section. In type of plan they were very similar to tenements (Fig. 8). The rentals per floor of such apartments varied from 5,000 to 7,000 dollars. Comparing them with a building such as 630, Park Avenue, which has only one apartment on each floor, one can see that although the latter is less costly to build, having less partitions, doors, windows, fittings, etc., it is far more attractive, and produces a rental of from ten to thirteen thousand dollars, according to the floor on which it is located. Mr. J. E. R. Carpenter has greatly improved the planning of the better class apartment in New York. He is an architect who has had the benefit of studying French planning as well as a considerable knowledge of real estate development. By promoting these schemes he has demonstrated in a practical way the advantages of fine planning, good equipment, economy and refined architectural design. All these designs provide accommodation on the scale of the private houses to which those who can afford such homes are accustomed, as well as the conveniences offered by high-class apartment house service. The basic principle of planning is the segregation of the three main elements in the accommodation :

1. Entertaining rooms.
2. Family and private rooms.
3. Service and servants' quarters.

From a letting point of view, the ground or first floor is least valuable. A portion of it is given up to main and offices, etc. A lot depends on the locality in which the apartments are erected, but this space can be subdivided

APARTMENT BUILDING
630 PARK AVENUE
PLAN OF TYPICAL FLOOR

J. E. R. CARPENTER
ARCHITECT
681 Fifth Ave., N. Y. C.

SCALE OF FEET

FIG. 8

service entrances, superintendent's apartment and office. The rentable portion is often let in small suites for doctors' offices, and in certain cases for select shops, restaurants, for use as shops more cheaply than for living quarters. The arrangement of the actual accommodation does not vary greatly except in the provision of the number of

rooms. The function of the elevator lobby above the first floor is that of a vestibule in a private house. It serves one or sometimes two apartments per floor. From this the entrance is directly into a gallery or reception hall, but look to streets. The kitchens, although facing courts, are wherever possible, given cross ventillation, the servants' rooms are grouped together with their own corridor and staircase, each servant having a separate room with

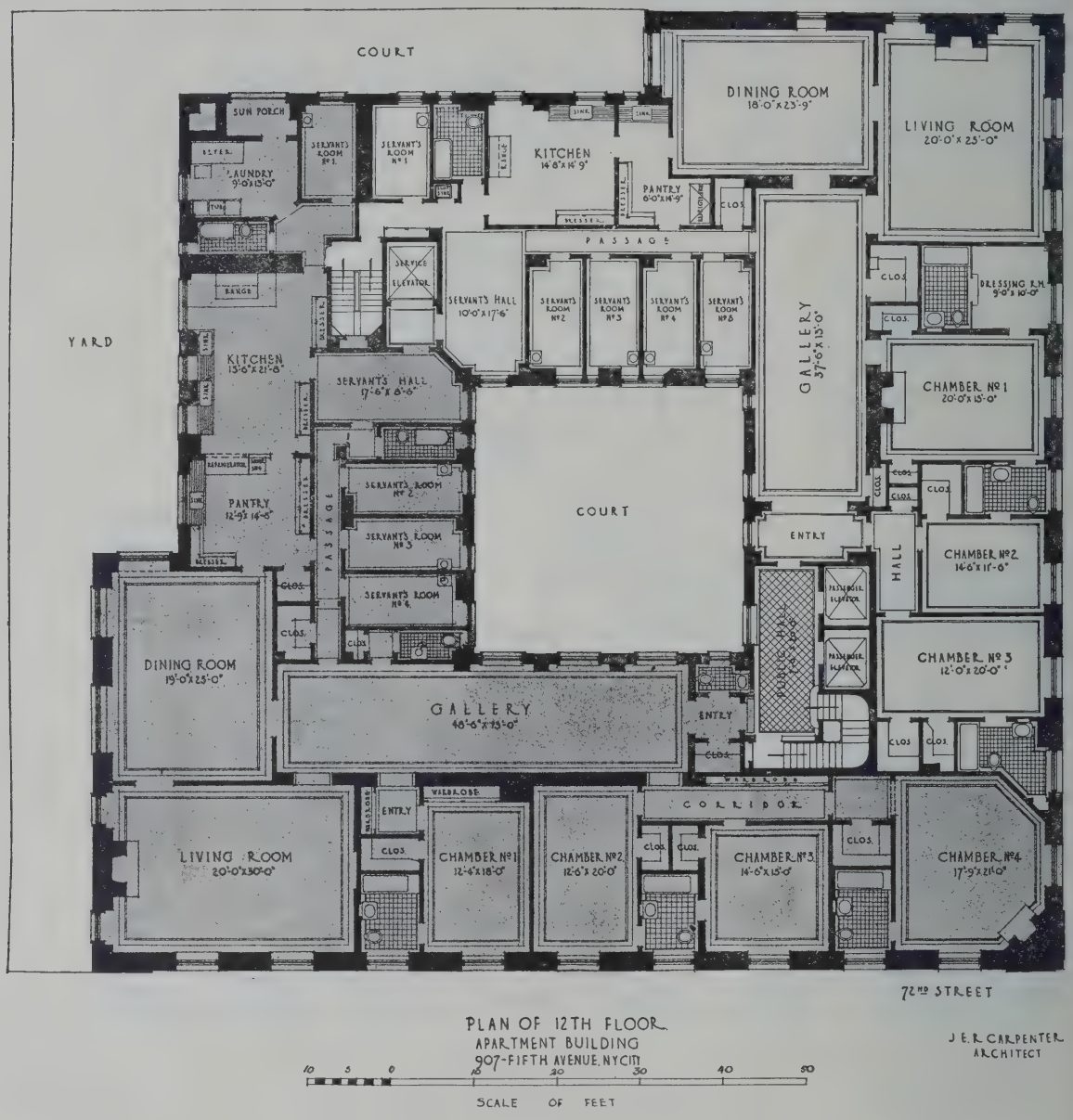


FIG. 9

occasionally a secondary door leads directly to the private family hall. In large apartments this is a convenience. By keeping the principle of the subdivision of the accommodation in mind, most of the faults and disadvantages which are considered to be inherent in flats, are avoided ; practically all the family and entertaining rooms have an outlavatory basin, a bathroom for their use also being provided. The entertaining section consists of dining-room, library, drawing-room and gallery, the latter being planned as a link between them and the private and service sections. In most plans it has no direct light, but is opened up to the other rooms with large doorways. The family portion

contains four or more bedrooms, ample bathrooms, one or two dressing-rooms, many closets fitted with space-saving appliances. Sometimes a private sitting-room or boudoir is included, or one of the larger bedrooms can be used for this purpose. Many of the most successful apartments are planned on sites 100 feet by 100 feet at the angle of a city block, enabling practically the whole of the important rooms to overlook the street.

630, Park Avenue, is a good example of the most luxurious type of New York apartment building, which illustrates most of the points mentioned above. The lighting and ventilation of all rooms are excellent, the arrangement of the dining-room, pantry, kitchen and servants' hall could not well be improved. The pantry cuts off the kitchen from the dining-room, and the servants' hall acts as a passage from the kitchen to the private hall, servants' quarters and gallery. The sizes of the rooms are shown on the plan.

550, Park Avenue, is another example of an apartment on an angle site, 115 feet by 100 feet. It has, however, two apartments to each floor, the larger one having frontages to 62nd Street and Park Avenue, and the smaller to 62nd Street only. The same principles of plannings are applied, but all the rooms are smaller. Neither the servants' hall nor pantry has direct light, but both act as cut-offs for kitchen smells. There is no main staircase, but two passenger elevators placed separately, each serving the private vestibules of its own group of flats. This system gives much greater privacy than two elevators serving a common vestibule from which both apartments open. In practice, there is little delay in waiting for the elevator to complete its trip. The service staircase is placed between the two kitchens, accessible from the stair hall, which also has a servants' passenger elevator and service elevator opening on to it. In both these apartments there is a room opening directly out of the gallery which can be used either as an additional living-room or as a bedroom. The smaller apartment has only two reception rooms instead of the larger ones' three. Its bedroooms overlook the court, but are all some distance away from the kitchens, which occupy one side of another court on to which the servants' rooms look out. In this case only three servants' bedrooms are provided per apartment, additional servants' rooms which are placed on the top floor can be rented independently. Hanging cupboards for servants' clothes are provided in the corridor to avoid encroaching on the 80 square feet allotted to such rooms.

No. 907, Fifth Avenue, which occupies a site of 142 feet by 114 feet, is planned round an internal court 32 feet square, which lights the servants' rooms, galleries and public hall. The ground floor is divided into one large and one small apartment, a superintendent's apartment and handsome entrance hall. The second, third, fourth, fifth and twelfth storeys (Fig.9) have two apartments of fourteen and sixteen rooms to each storey. The sixth, seventh, eighth, ninth, tenth and eleventh storeys are partly duplex and partly single apartments, each storey having one large apartment and half of the duplex. The apartments are L-shaped, which has caused a different arrangement of accommodation to those previously considered. The gallery has direct light from the internal court, only the living-rooms overlook the street, the remainder of the outer walls being given up to bedrooms. In the larger apartment a laundry with drying porch is provided. Both the kitchens have outside exposures and are isolated from the dining-rooms by pantries. The elevators are planned at the junction of the two apartments and discharge on to a public hall opening directly on to the galleries.

Although angle sites are the most desirable, quite a number of apartment schemes are of necessity built on sites having only one street frontage varying from 100 to 50 feet. The favourite plan for a width of 100 feet or 75 feet is the " H " shape, the apartments are considerably smaller than those already considered, the majority having four to the storey. 120, East Seventy-fifth Street, by Mr. Donn Barber, is typical of the better solutions, the planning could not well be simpler (Fig.10). The elevator hall is in the centre of the site, and on to it both the passenger and freight elevators discharge. At either end there are doors to the apartments, and on either side there is a door leading to a staircase. By this planning, external fire escapes are avoided. The two larger apartments are planned at the back of the site, and the two smaller overlooking the street. Only two of the principal rooms overlook the courts. It will be noticed that in spite of the limited accommodation the segregation of the accommodation into family, service and entertaining sections is maintained. These apartments were primarily intended for those wishing to reside in a good neighbourhood, but who did not wish to keep up a large establishment requiring many servants. The whole of the rooms are adequately lighted, square-headed windows being used throughout. The partitions are varied somewhat on the different floors to suit individual taste.

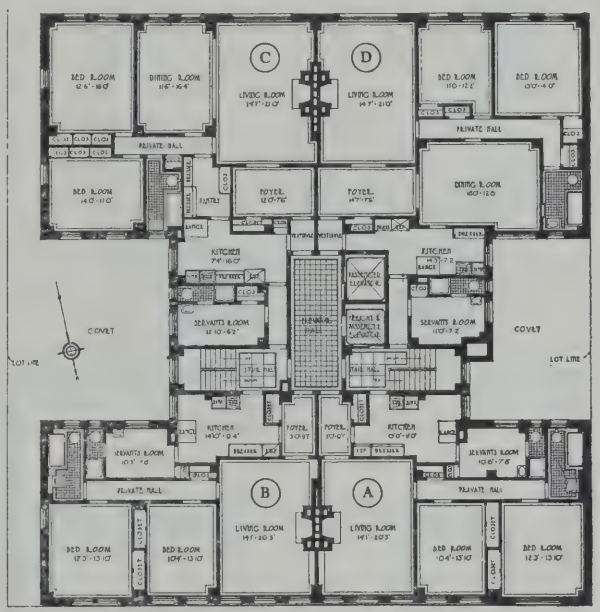
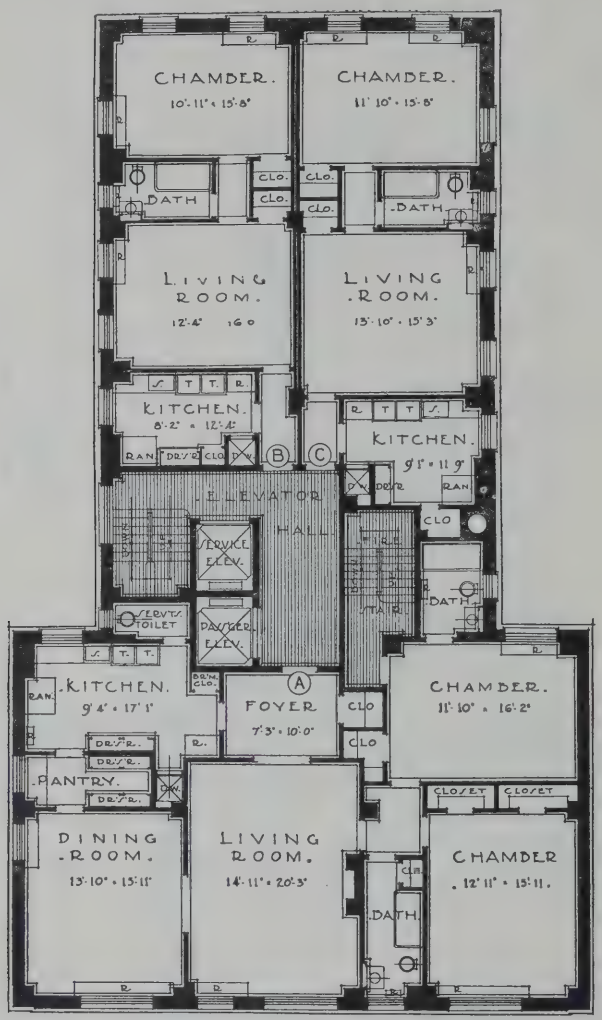


FIG. 10.—120 EAST SEVENTY-FIFTH STREET, N.Y.C.
Donn Barber, Architect

In this connection the advantages of steel framing are obvious. Only the living-rooms have fireplaces, but where the dining-room is planned *en suite* with it, its omission from the latter is not noticeable.



2nd, 3rd, 4th, 5th and 6th Story Plan

APARTMENT HOUSE AT 19-21 WEST 55TH STREET

NINETEEN WEST FIFTY-FIFTH STREET CORPORATION

Scale

D EVERETT WAID, Architect
No 1 Madison Avenue
New York City.

Managing Agents
GAINES, VAN NOSTRAND & MORRISON, Inc.
25 East 26th Street
New York City

FIG. 11

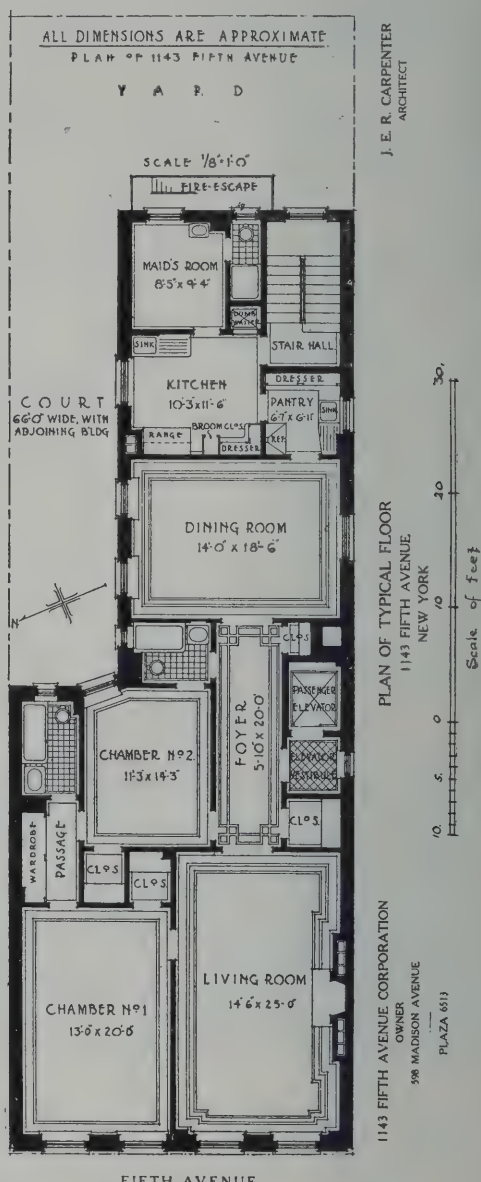
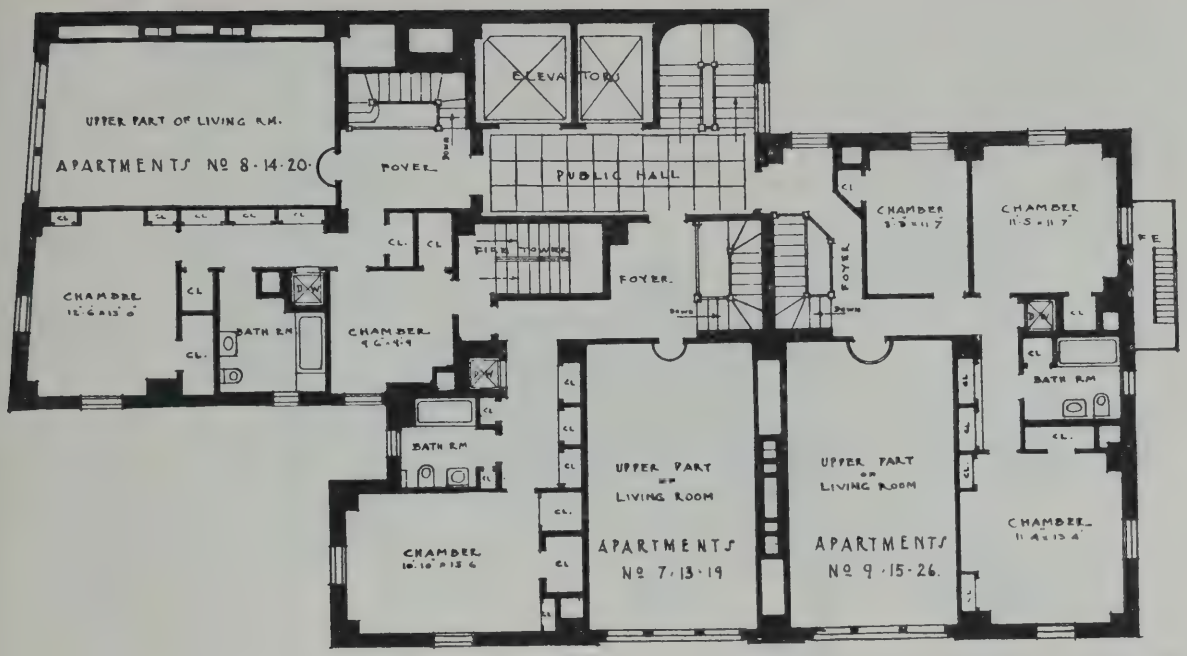


FIG. 12

Lots only 50 feet wide present much greater difficulties of planning. An example of a solution on such a site is the house designed by Mr. D. Everett Waid, at 19–21, West Fifty-fifth Street. In this example one medium-sized apartment occupies the whole of the frontage to the street and has a south aspect (Fig. 11). At the back, there are two small apartments which consist of living-room, kitchen, bedroom and bathroom. The outlook of these is to the narrow courts at the sides and to the somewhat wider court at the back. It is usually assumed that similar courts will be left by adjoining owners. The value of the apartment increases as they are located on the higher floors. The front apartments easily let at £1,000 a year, and the smaller vary from £300 to £500 according to floor. The internal areas are built of buff bricks. The drawings of this apartment are typical of the best Ameri-



4TH 7TH AND 10TH FLOORS

FIG. 13

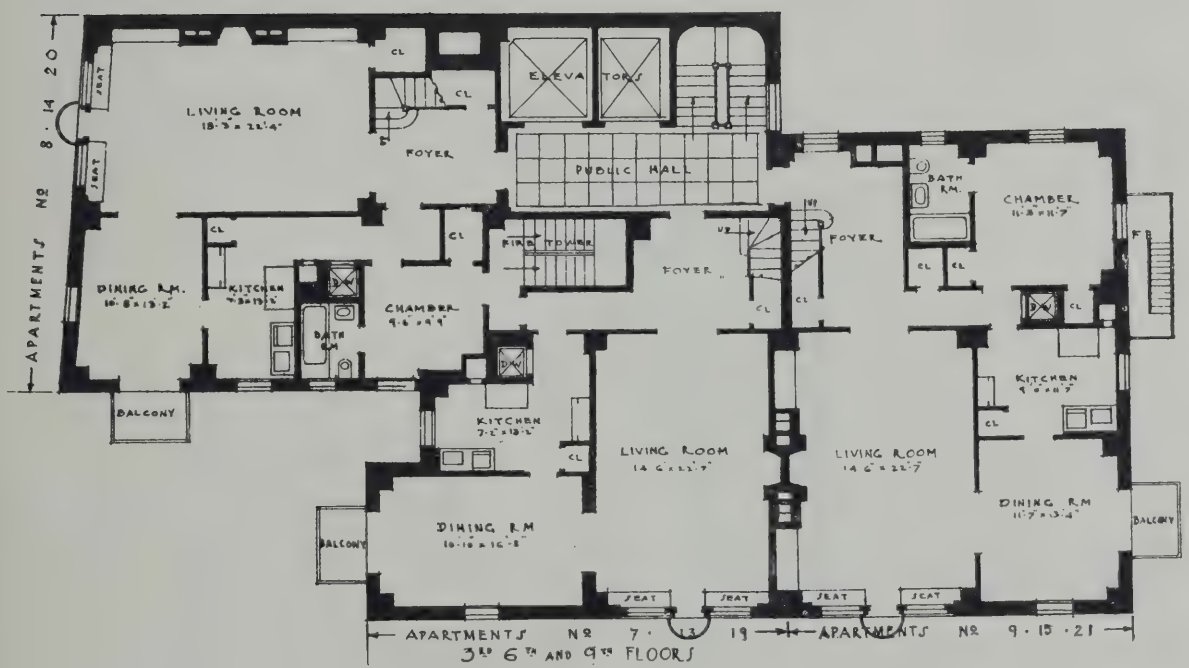


FIG. 14

9 EAST TWENTY-NINTH STREET, NEW YORK. Helmle & Corbett, Architects

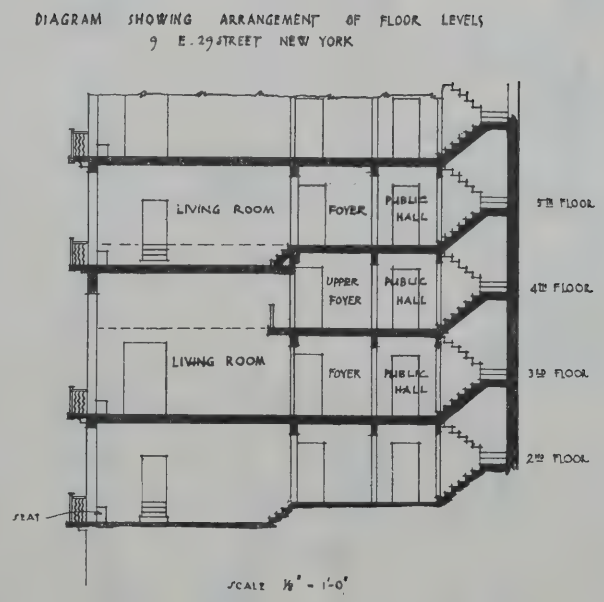


FIG. 15

Helmle & Corbett, Architects, New York

FIG. 15A

ENTRANCE TO NO. 9 EAST TWENTY-NINTH STREET, NEW YORK

Messrs. Helmle & Corbett, Architects

Sketch by W, T. Benslyn

can practice in construction and show how fully all points of equipment are worked out previous to erection.

1143, Fifth Avenue, by Mr. J. E. R. Carpenter, is an example of an apartment house planned on a narrow site 30 feet wide, but adjoining a building controlled by the same owners, so that the rear rooms overlook a court 66 feet wide (Fig. 12). There is only one apartment to each floor and the entrance is direct into a foyer which links the dining-room with the living-room, making a suite for entertaining. The kitchen, pantry, maids' room and servants' staircase are all at the back of the site.

No. 9, East Twenty-ninth Street, New York, recently erected by Messrs. Helmle & Corbett, at the corner of University Place and East Twenty-ninth Street, does not follow from the public hall, and a living-room four steps lower divided from the foyer by a small gallery, the additional height obtained in this way giving better scale to the room. The larger apartment has in addition two bedrooms, bathroom and kitchen, but the two smaller have only one bedroom. The Third and Fourth, Sixth and Seventh and the Ninth and Tenth floors are devoted to duplex apartments in which the living-room runs up through two storeys, being treated on studio lines with a curved ceiling. On the lower storey, dining-room and kitchen are thus made possible, over which there are bedrooms, &c., reached by an independent staircase from the foyer. Access to the public hall is provided from the upper as well as the lower floors. (Figs. 13, 14 & 15).

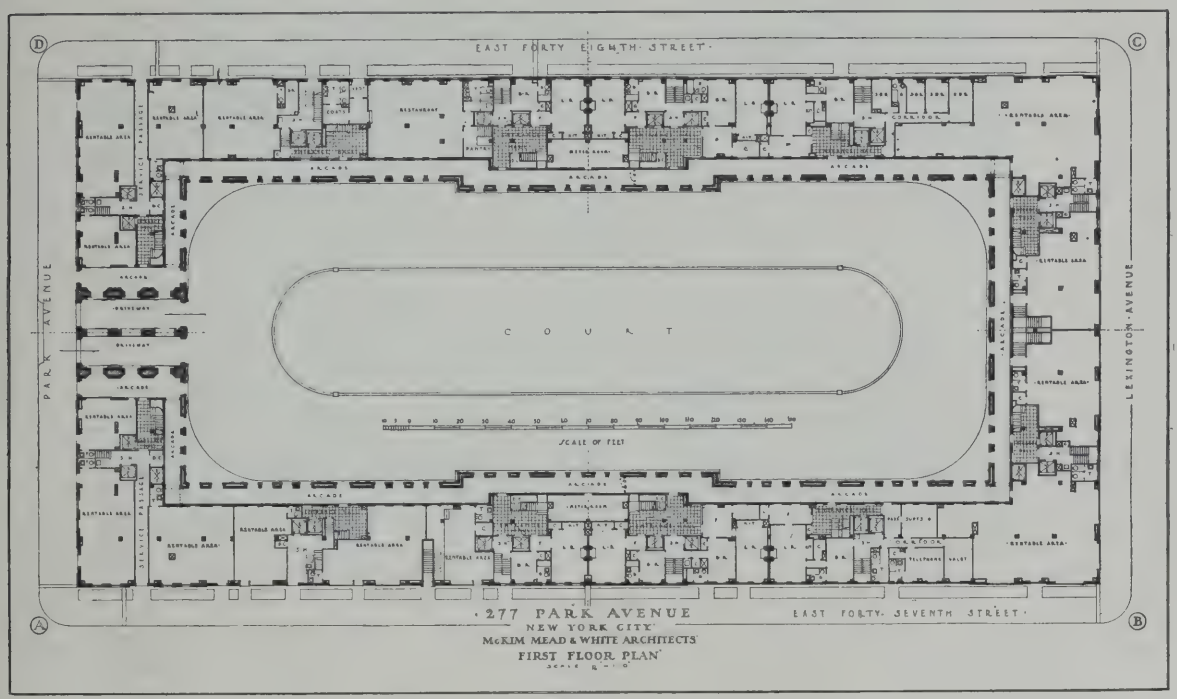


FIG. 16

any of the usual types either in plan or section. On the first or entrance floor there is a fine hall and vestibule leading to the public hall from which the elevators and main staircase lead to the upper floors. There are three small apartments on this floor. The planning of a garden at the angle of the site makes it possible to light apartments Nos. 1 and 2 entirely from street frontages, and to place one side of apartment No. 2 and the elevators against a blank wall. The upper floors are divided up in a most ingenious way, by keeping normal floor heights for the smaller rooms such as foyers, bedrooms, bathrooms, kitchens, &c., as well as the public hall, and dividing the height of these three floors between two living-rooms. On the Second, Fifth, Eighth, and Eleventh floors, there are three apartments, each with its foyer leading directly

Although this building is divided into two, three, four, five, six and seven-room apartments, it is found that the three, four and five are most sought after. Seven-room apartments are let for $4,000 per annum, three-room for $2,000. Servants' rooms are arranged in a pent-house on the roof, but it is quite possible to run the smaller apartments without servants. The kitchens are well designed, each having its incinerator, dumb-waiter, range, wash-tubs, refrigerator, and ice-making machine ; laundries are arranged in the basement, a wash-tub, ironing-board, iron-heater and drying-closet being provided for each apartment. The iron-heaters are fitted with red lights to show when the current is in use. Externally, the design is a good expression of the internal arrangements. The whole is carried out in yellow brick, with stone dressings,

and has a well-designed entrance doorway of which a sketch is given.

In No. 277, Park Avenue, we have a further illustration of the advantages obtainable by dealing with a city block in one scheme. The site has frontages of 200 feet to Park and Lexington Avenues and of 400 feet to East Forty-seventh and Forty-eighth Streets. The problem of placing apartments on such a site has many solutions, most of which have the fault of trying to cover too much of the site with buildings, which besides diminishing the amount of light and air required often results in ineffective spaces in the apartments themselves. Messrs. McKim Mead & White have avoided this by leaving almost 50 per cent. of the area of this site unbuilt on. The whole of this unbuilt on space is concentrated in one large internal court over 300 feet long and nearly 120 feet wide. This court is surrounded by buildings 128 feet high and varying in width from 41 to 45 feet. The width of the block has been carefully considered in relation to the effective lighting of the two rooms into which it is divided. The planning of the rooms in the apartments at the corners is very well managed. The entrance for residents is from Park Avenue and consists of two large arched driveways for in and out motor traffic, on either side of which there are openings leading directly to the arcade which surrounds the court. The apartments are divided into twelve sets, each set having its own entrance hall opening off the arcade. The centre of the court is occupied by a large planted space round which motors can drive stopping opposite whichever entrance is wanted. All service entrances are planned leading from the side streets and Lexington Avenue, keeping the large internal court entirely free from tradesmen and their vans. There are pass-doors for communication between the entrance and service halls. One service and one passenger elevator are planned for each set of apartments, besides public and service staircases, so arranged that they meet the requirements of the Act with reference to means of escape in case of fire, thus avoiding the use of external iron staircases. The apartments vary in size from small non-housekeeping units consisting of foyer, living-room, bed and bathroom to large housekeeping apartments consisting of gallery, dining-room, living-room, three bed and two bathrooms, kitchen and maid's room. There are also smaller housekeeping units with foyer, living-room, dining annexe and kitchenette, two bed and one bathroom and maid's room. In all the above, ample cupboard space is provided. All bathrooms have windows and with the exception of the foyers and galleries, there are no rooms without direct light. No kitchens open on to the court which is thus kept entirely free from cooking smells. There is a difference of level of one storey between Park and Lexington Avenues, an additional storey being planned along the latter and part of the side streets. The greater part of the accommodation at street level is let off as shops. The storeys are 10 feet 2½ inches from floor to floor, and the rooms except bathrooms are all lighted by one or more sash windows 6 feet by 4 feet. There is a pent-house on

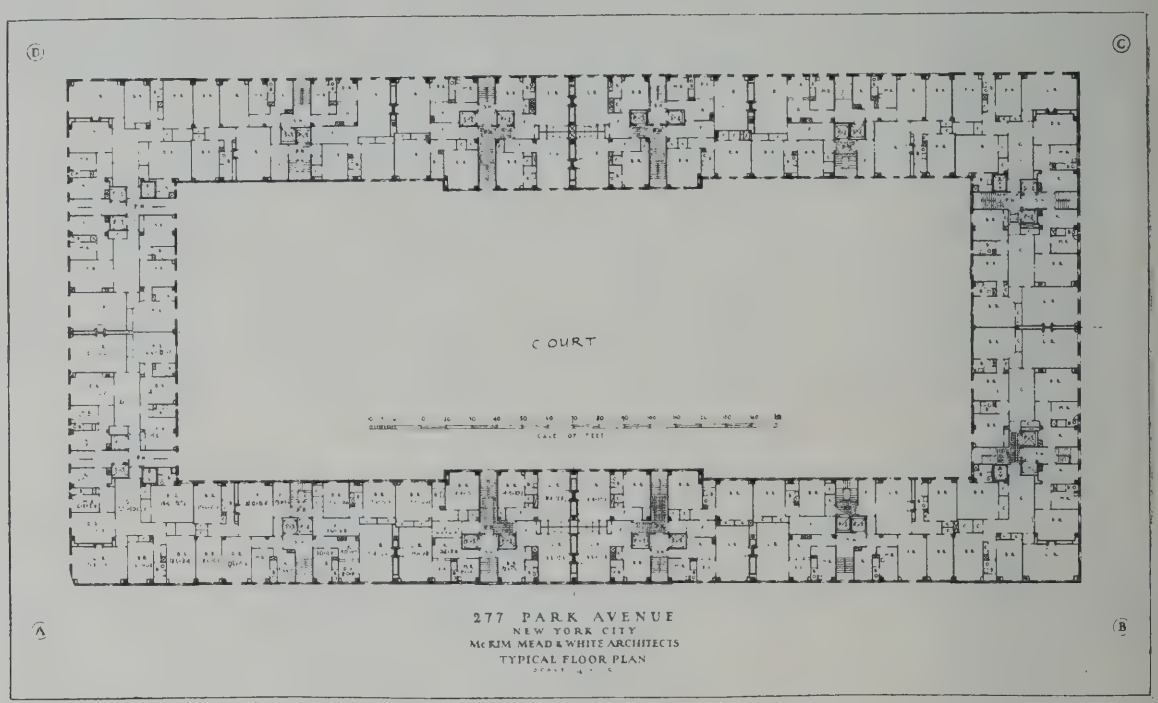


FIG. 17

the roof in which additional servants' rooms and laundries are arranged. Above this level, the machine-rooms of the elevators are carried up and on the Park Avenue side, tanks are placed above them in two towers which have been treated architecturally. This scheme impresses one most by its extraordinary simplicity and sense of unity. There is no straining or forcing of the natural development of the requirements by the introduction of unnecessary architectural features. The character of the whole may be compared to that of an early Italian Renaissance palace in which the scale has been successfully handled. The three lower storeys are faced with stone, the remainder of the elevation being in brick. Each floor is equally well lighted by windows spaced symmetrically between slightly rusticated projections emphasising the angles. The whole is crowned by a projecting cornice.

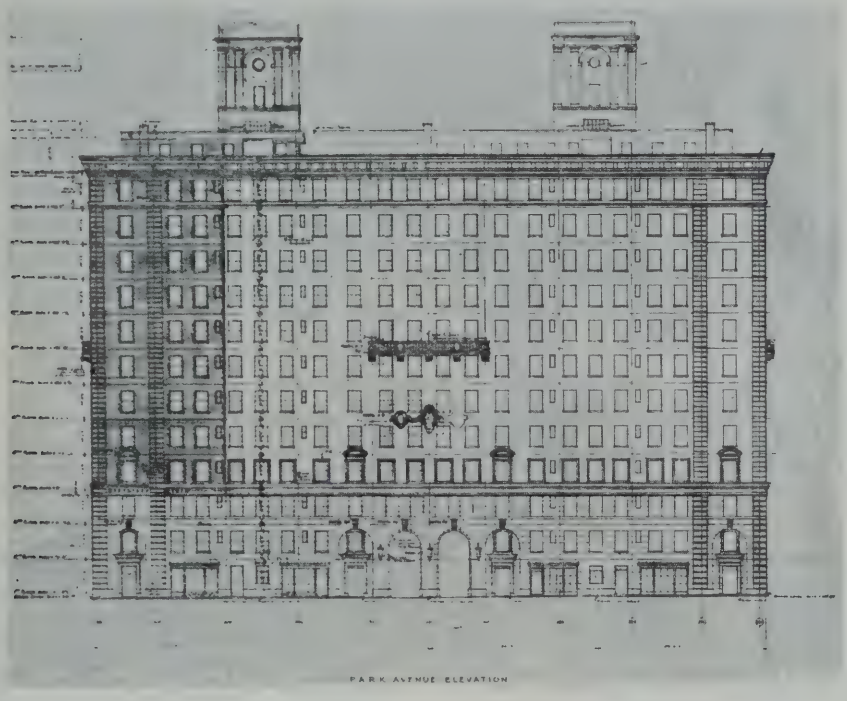
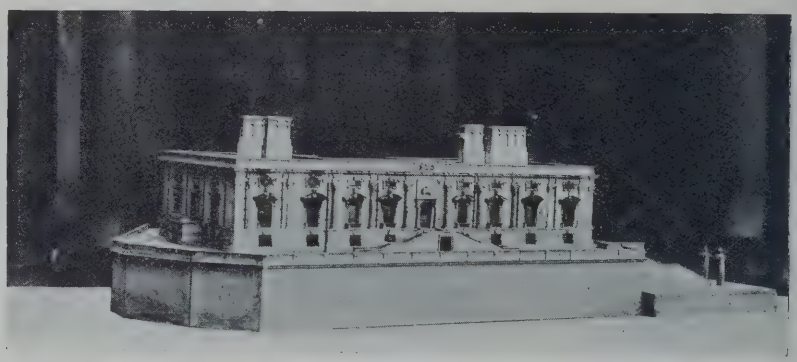


FIG. 18.—PARK AVENUE ELEVATION. NO. 277, PARK AVENUE, NEW YORK
McKim, Mead and White, Architects

(The second part of Mr. Benslyn's Paper will be published in the next issue of the Journal, 18 *July* 1925*)*

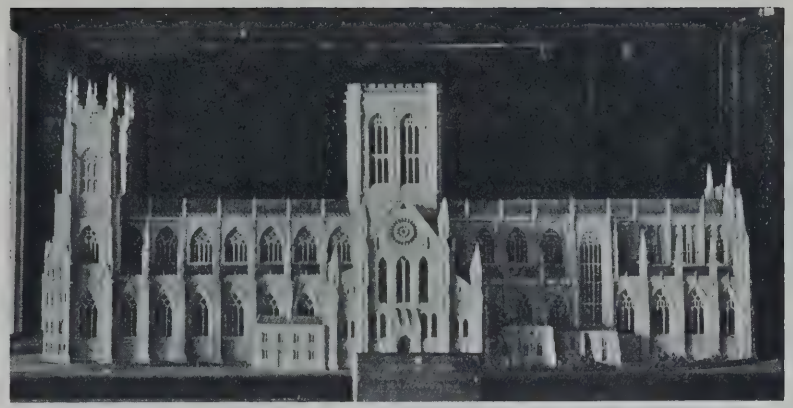
Architectural Models in Relation to the Preservation of Ancient Buildings

BY JOHN SWARBRICK [*F.*], REPORTING ARCHITECT TO THE ANCIENT MONUMENTS SOCIETY

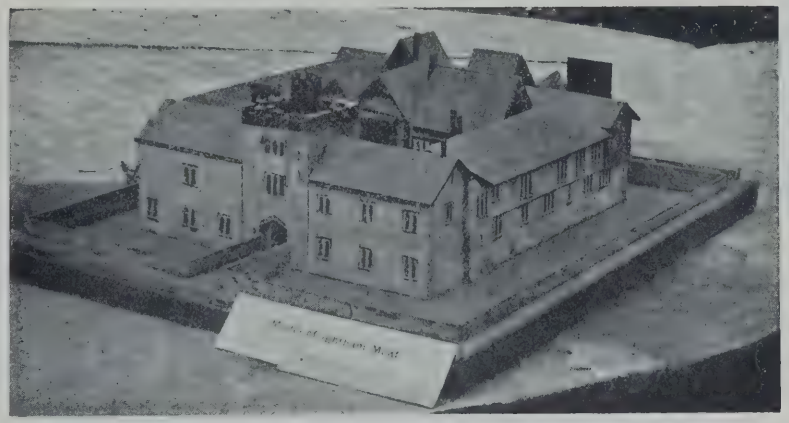


MR. MARCH'S MODEL OF NOTTINGHAM CASTLE

"ARCHITECTURAL Models in Relation to the Preservation of Ancient Buildings" formed the subject of a lecture given by the Right Hon. Lady Constance Hatch, in the Manchester City Art Gallery, recently, when Dr. Hewlett Johnson, the Dean of Manchester, presided. This lecture was one of a series organised by the Ancient Monuments Society, which was formed last year for the study and conservation of ancient buildings and craftsmanship. Already this body has been called upon to undertake active work of various kinds in the north-western counties of England and in North Wales. Amongst those who have taken an interest in the movement from its early stages are the Earl of Crawford (the President), Lady Constance Hatch, the Earl of Stamford, Professor R. S. Conway, Professor C. H. Reilly, Professor Dickie, Dr. P. S. Worthington, Professor T. F. Tout (then Director of Historical Studies at the Manchester University), and a number of well-known members of the Institute. As one of the Vice-Presidents, Lady Hatch called the attention of the Executive Committee to the value of accurate scale models of artistic quality in arousing interest in old buildings, and so assisting in their preservation. It has long been realised that without sympathetic and enlightened public opinion it is exceedingly difficult to arouse enthusiasm and secure united and effective action in endeavours to save our national monuments from destruction. Much can be done by making it possible for students and others with limited travelling facilities to appreciate and admire buildings of national interest. It has usually been the practice to make belated efforts to prevent the demolition of an important architectural work after some influential administrative department has recommended its removal on alleged utilitarian grounds. Such action is usually the result of the almost incredible lack of appreciation for such works that exists among the mass of the population. For this lack, we have only ourselves to thank. So long as the educational authorities do not seek at an early age to instil into the mind some interest in architecture and in our national heritage of ancient monuments, it will not be easy for the public as a whole to realise the full significance of our old buildings, and the importance of securing the permanent preservation of important examples. It was with this broad conception of our duty in the matter that Lady Constance Hatch prepared her lecture and searched the country from end to end in search of the finest models. Naturally, her object was to show to her Manchester audience those examples which appeared to be likely to appeal most to them. The selection was singularly fortunate; and, as one of that audience, I realised what great possibilities there are of utilising suitable models of this kind in connection with public instruction in architecture. Personally, I should like to see in every town of any importance a permanent exhibition, illustrating by models, framed photographs, drawings and other exhibits the whole history of architectural development. To such exhibitions, children in elementary schools could be taken periodically for short lectures and drawing lessons. Such instruction would be a great relief from the tedium of ordinary training, and the impressions that it would create in the juvenile mind would be of great value in subsequent years. Once a healthy interest had been so aroused, I venture to think, ill-advised schemes affecting the welfare of our architectural treasures would not be received without some general expression of public opinion. I hope that some day the Institute may see their way to approach our educationists for the purpose of advocating the importance of early instruction of this kind and the institution of such museums as I have suggested.

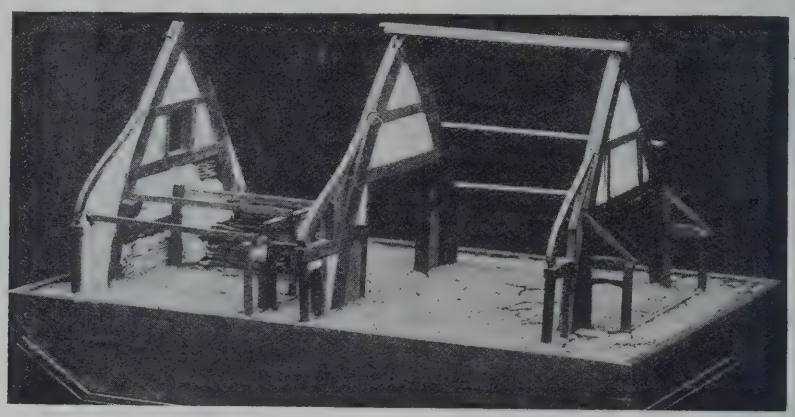


Model of York Minister. (Now in the City Art Gallery at York)



Model of Ightham Moat, Kent.

In very simple language, avoiding technicalities and disregarding strict chronological sequence, Lady Constance at once aroused the interest of her audience, telling them the histories of the models, as they had been told to her, either by their possessors or those who are their custodians on behalf of the nation. After referring to the models of Sir Christopher Wren, her Ladyship exhibited the one made by Wren's contemporary, Mr. March, for William Cavendish, first Duke of Newcastle, who decided, in his 83rd year, to build a house for himself on the site of Nottingham Castle. To his Grace plans were "just a tissue of meticulous and inconsequent lines, conveying neither sense nor shape." As we all know, this eccentric nobleman was merely voicing the impressions of many of our own clients unaccustomed to working



Model of a Crutch-Framed Cottage, with Wattle and Daub Panels

drawings and those of the untrained public as a whole. Lady Constance, fully aware of the necessity of combining historical incident with artistic comment in lectures to uninitiated laymen, was able to infuse a genuine interest in architecture in the minds of her audience, and a desire to study it further, by the excellent method of treatment adopted. Mr. Harvey's model of the Westminster Hall roof served to demonstrate the nature of the mechanical forces to be dealt with, whilst the small models of Cathedrals enabled their main characteristics to be quickly realised and comparisons made, in a manner that would not have been otherwise possible. Some of these models were exhibited last year at Grosvenor House by the Architecture Club. The simple model of a cruck-framed cottage, with wattle and daub panels, also aroused the interest of those familiar with half-timber construction. The variety in the character of the subjects, from a majestic cathedral to a humble cottage, was particularly helpful and well considered. A model of Salisbury Cathedral, the work of a deceased Chichester architect, acquired by the lecturer from the grandson of the original purchaser, was shown, together with a fine model of York Minster, made by Mr. C. N. Thwaites and presented to the city of York. The interest of the laymen was naturally aroused by the model of Winchester Cathedral, carved by a shepherd, and the one of the church at Ormskirk, Lancashire, now in the Wigan Public Library, made by a railway signalman. It is most encouraging in these days to find that amongst those who have such limited facilities for study there is often an inherent interest in such matters. Surely the presence of ability of this kind amongst the untrained points to the desirability of providing local exhibitions of the kind suggested that would stimulate endeavour and lead to the development of good taste. So many who have a slight knowledge of architecture have not yet realised how to regard it, as a method of artistic expression. The works of John Ruskin and others have not helped them as they might have done, and we find them considering how far the arch might be capable of more worthy expression than the beam, in what measure Christian art is superior to Pagan, and to what extent those who produce beautiful things must themselves be beautiful in character. We may know for a fact that these are all exploded theories; but the public, unfortunately, do not know that; and, at present, there is very little chance of their becoming very much better informed and learning to appreciate architecture mainly as an art. Incidentally, the models of Tintern, Melrose and Kirkstall Abbeys and of Warwick and Berkeley Castles by John and James Bellamy were referred to. The value of such models as the one of Rochester Castle restored, to those engaged in archæological research, was explained. Models of Edinburgh in the seventeenth century, Cardiff, Manchester and Newcastle-upon-Tyne also came under review. It is not possible to enter in detail into the fascinating discourse or to describe the manner in which the allusions to local buildings and their history were appreciated; but I can at least record that the words and illustrations awakened profound interest, afforded great pleasure, and showed how readily the mind of the public will respond when sympathetically approached. Probably few of the illustrations produced greater interest than those ancient manor-houses, such as Ightham Moat, Kent; "The Gables," Suffolk; and Bramall Hall. The model of Bramall is in the Osborne House collection, and was illustrated by permission of the King.

The Franco-British Union of Architects

FIFTH ANNUAL GENERAL MEETING.

The Franco-British Union of Architects this year broke the sequence of its annual exchange visits, the British contingent visiting Paris for the second time in succession. The existence in Paris of the Exhibition of Decorative Arts supplied an agreeable excuse for this departure.

During this fifth meeting the Union progressed not only towards increased membership, but also towards its real object—the interchange of ideas and the growth of good fellowship. Our French colleagues have a genuine interest in, and respect for, those English architects whose names are familiar in both countries, and they show their cordiality by a generous hospitality and the lavish offering of their valuable time. To be frank, they are punctilious in attendance where we are sometimes casual, the probable explanation being that in Paris there are other than purely architectural lures.

As speakers, our hosts are without peer, and at the Banquet which concluded the meeting, both Monsieur Paul Léon and Monsieur Defrasse upheld the finest traditions, the beauty of Monsieur Léon's phrases assisting somewhat to soften one's disappointment in his rather disparaging conclusions as to the value of the Paris Exhibition.

The banquet was not a gathering of enthusiastic beginners or of pioneers, and while counsels of wisdom and discretion were to be expected, it is safe to say that few enthusiasms could be kindled by such negative praise as was awarded to the very real effort which, in the Exhibition, has been made on all sides.

Of the programmes of these meetings brief mention must be made. They consist, in general, of a " Séance Générale " for the transaction of business, of a reception and banquet, and of visits to places and buildings old and new—generally old.

On this occasion a pleasant day was occupied with Chantilly, Senlis, and the little-known Abbaye of Chaalis, while the Salon des Artistes Français and the Exhibition supplied the contrasts. The Salon this year is more interesting than the Academy. Architecturally, it is somewhat uninspiring, but this does not belittle Mr. Robert Atkinson's fine achievement in securing a Médaille de Bronze for his able reconstruction scheme for Bath.

Sir Reginald Blomfield, the Vice-president for 1925–26, was unfortunately amongst others absent from the British party, which included Messrs. Atkinson, Bradshaw, Cart de Lafontaine, Bartle Cox, Davis, de Soissons, Hall, Hamp, Hepworth, Maufe, Murray, Prentice and Robertson. The meeting, thanks to our French hosts and the organising work of Mr. Arthur Davis and Mr. Cart de Lafontaine, was an unqualified success, ending, as do all good meetings of architects, in great talk and cordiality and complete disagreement on every point which concerns our art. One feels especially that this gay and fantastic Decorative Arts Exhibition has the faculty, like the Hudson Memorial, of arousing primitive instincts and Berserker rage ; the breaking of the butterfly in the wheel is being once more seriously undertaken.

HOWARD ROBERTSON [*F.*]

Reviews

ARCHITECTURAL PRACTICE AND PROCEDURE : *A Handbook for Students. By Hamilton H. Turner, F.S.I. With a Foreword by Maurice E. Webb. B. T. Batsford, Ltd., 94 High Holborn. 15s. net.*

There are many architects who will open this book by Mr. Hamilton H. Turner with a feeling of curiosity to see how far he has probed into the bewildering intricacy of the " practice and procedure " of the profession, and although the book is primarily designed for the student and the beginner, they will be rewarded by finding an eminently sane and helpful treatment of an exceptionally difficult subject. The onlooker sees most of the game, and a quantity surveyor has an unusual opportunity for apprehending, weighing and criticising all the purely business activities of the architect. Mr. Turner refers constantly to that contract of friendship, sealed by valuable service, which exists between architect and surveyor, and Mr. Maurice Webb dwells upon the same theme in his appreciative preface. In architectural practice the difficulties are legion, difficulties with clients, with builders, with local authorities, with merchants, and with those twin adversaries materials and prices ; and it is in the struggle with these foes (all of which must be turned into friendly agents for our purpose) that the quantity surveyor comes to our aid and proves his worth. He can bring help in the nick of time ; he can even step into the trench, handling our own weapons dexterously, while we get a breathing space for recuperation.

The model quantity surveyor knows nothing about Art with a capital A, and our author, whether from a naive indifference to the anguish of parturition or from a tactful assumption of a *rôle*, pictures the architect wrapped in delightful æsthetic dreams and therefore unmindful of the major business issues at stake. The standpoint is an excellent one for driving home his lesson that mistakes in practice and imperfect procedure do more than anything else to weaken the artist's powers. His wise and kindly counsel should save many a young architect from those pitfalls which professional practice holds in such dismaying numbers.

It is the spirit that informs the text of Mr. Turner's book which will make his work so helpful to his readers. The author is not out to magnify his own knowledge—indeed, he is too modest in many of his expressions—he is simply moved to give the result of his own experience for the benefit of others. A busy man who amid the distractions of an exacting occupation finds time to write over 300 pages of kindly suggestion and helpful advice wins our gratitude. No issue is burked; all the duties, negotiations and proper preoccupations of an architect are brought under review, and are also brought to the touchstone of definite cases within the writer's experience. The working of an office is explained, and the filing and copying of drawings and letters carefully examined. Surveys, specifications, tenders, contracts, certificates and the inspection of works are all described. The whole of a quantity surveyor's work and functions and the various forms of estimates are defined, and the difficult questions of variations, extras and sub-contracts are elucidated. Mr. Turner has some useful observations on the client, builder, clerk of works, builder's foreman, etc., and technical matters like the London Building Acts, testing drains, and ancient lights are adequately treated. But perhaps the most useful parts of the book will be found in a very complete "type" specification, fully indexed, and in the forms and detailed instructions for schedules of dilapidations, reports on property to be purchased, party wall awards, schedules of prices and prime cost contracts.

Enough has been said to show that this book, which does not pretend to be exhaustive, succeeds nevertheless in covering the ground, and rendering the architect just the assistance he needs most. If it remains unread on the shelves of those architects who are lucky enough to be able to dream dreams and realise them, we may be sure it will be eagerly consulted by the majority of the profession who come under the colloquial and exact definition of "the buffer who stands between the client and the builder."

WALTER H. GODFREY.

ESTIMATING FOR BUILDINGS AND PUBLIC WORKS. *B. Price Davis, F.S.I.* [London: Educational Publishing Company, Ltd.]

This is the third edition of this useful work and is about five times the size of the previous books which are known as the Building Estimates.

The tendency of prices to become stabilised is more evident than was the case when previous editions were issued and a second part has been included which is termed "Pricing." This covers the main ground of the first part using its basic data and by means of basic rates resolving them into money value.

The author is not in agreement with some of the grouping of the Standard Method of Measurement; in these cases he points out the reason for adopting a different arrangement.

The book is one which should be in every architect's office, and should be constantly referred to. Students of architecture should study it as a *vade mecum* to clear detailing and a useful reference for technical terms.

H. D. SEARLES-WOOD [*F.*].

SMALL COUNTRY HOUSES OF TO-DAY. *Volume III. By R. Randal Phillips, Hon. A.R.I.B.A.* [London: Country Life, Ltd.]

This is a most welcome addition to the series of examples of small modern country houses started by Sir Lawrence Weaver.

There is no doubt that these books, illustrated with most excellent photographs, are of great value in encouraging people to take an interest in architecture. That the ordinary public is taking a greater interest, at all events in domestic architecture, is shown by the undoubted improvement in the design of the average house which is built to-day. For it is the public that is chiefly responsible for the kind of houses that are built, and if people are encouraged to take an interest in architecture and taught to recognise and avoid what is bad, even the speculative builder, who has been responsible for so many atrocities in the past, will soon learn that bad architecture does not pay, and that to earn his living he must manage to do something better.

Then there is a much larger proportion of small houses to-day built by competent architects, and this is also a sign that people take a greater interest in architecture. It is important that this interest should be guided along the right lines, as there is a tendency for many people to be too much obsessed with a craze for the "antique" and to consider that the greatest merit a modern house can have is that it should appear to have been built two or three hundred years ago.

The examples shown in Mr. Phillips's book and the other two volumes of the series should serve to show those who need persuading that it is not necessary to fake or slavishly to copy old work in order to give a pleasing effect to a modern building.

Country Life is justly famous for its photographs, and the illustrations in this book are quite up to its usual high standard. Mr. Phillips rightly insists on the importance of the plan, and a plan is given of one or more floors of each house illustrated. There are altogether forty examples described and illustrated. Most of them have been built within the last few years, and though they are of course chosen from among the best of their kind, they are most encouraging evidence of the class of work which is appreciated by the public, and the more the public can be made familiar by books such as this with the best examples of both ancient and modern architecture, the sooner will it refuse to put up with what is bad.

Besides being very well illustrated, the book is well written, with descriptions of each example combined with some good advice to those who contemplate having a house built for themselves, and forms a most attractive volume, in every way worthy of its predecessors.

B. H. JACKSON [*A.*].

HOUSING IN HOLLAND.

Visit of National Housing and Town Planning Council—Easter 1925.

By T. Alwyn Lloyd [*F.*].

A party of over 100 members and friends of the National Housing and Town Planning Council, consisting of architects, surveyors and members and officials of local authorities, left London on 9 April for a visit to Holland to inspect there the housing work done during recent years. The party stayed for ten days at The Hague, being accommodated at several hotels, and did the journeys from there to the other towns by motor cars. Besides The Hague, Amsterdam and Rotterdam were visited, also Volendam on the Zuyder Zee and Haarlem. The opportunity was taken at the latter place to visit an International Horticultural Exhibition, where the delightful exhibits of Dutch and other garden culture were viewed as a pleasant break from housing schemes.

Both the quantity and quality of housing carried out in Holland since the war are remarkable. In a country about a fifth the size of Great Britain over 200,000 houses have been built in the last 6½ years. The State entered energetically into the task of assisting the renewal of building at a time when, owing to the war and post-war difficulties, private enterprise was at a standstill. The amount of the State subsidy has varied, as in this country, according to the needs of the time and the availability of building materials and labour. So successfully, however, have the Dutch authorities grappled with their problem that they have by now almost caught up with their housing shortage. Building prices have also become sufficiently stabilised, in relation to rents obtainable, to make a State subsidy no longer essential, and the industry is now looking forward to a period of normal operation, both as regards finance and technique. Owing to its great size, the largest number of dwellings have been built in and around Amsterdam, where a very progressive and businesslike Council, under the leadership of its well-known Housing Director, Mr. Keppler, has been extraordinarily active. What impressed the visitors more than anything else, particularly the architects and builders, was the wonderful way in which the Dutch to-day, as in the past, are valiantly overcoming the difficulties inherent in the low-lying and waterlogged nature of their sites. In Amsterdam it is estimated that in the erection of large blocks of tenement dwellings one-third of the total cost of building has to be expended in foundations and work below ground level. Wooden piles are driven down 30 to 50 feet or more through the sand, to a more or less solid bottom, and reinforced concrete foundations are built on the piles. In order to make up the level of some of the sites, thousands of tons of sand have been carted from the seaboard.

Whatever we may think of the surprising architecture of the new houses and block dwellings in Amsterdam—and opinions favourable and unfavourable were freely expressed—it is important to remember that the designs were prepared, not by an official architect or surveyor, or by his assistant, as frequently happens in our country, but by a group of young, highly trained Dutch architects. These men, through the progressive policy of the Town Council, were given an opportunity which in the ordinary way might never have come to young, unknown architects, however talented they might be. That they have risen to the full height of their opportunity is an open question. Personally, while one cannot help being intrigued and interested by the amazing studies in brickwork and the variegated details, one felt that this architecture was too violent a departure from past tradition, and often, indeed, from sound methods of construction, to be successful. Our own examples of domestic architecture, as applied to housing schemes designed by British architects, though they be limited in scope and perhaps tame in general effect, are more satisfying and, what is more important, less likely to jar on the nerves of future generations.

In Amsterdam particularly the one family house is the exception—not the rule—in new housing, and one could not help regretting this from every point of view. Our English tradition of the separate house, which we have cherished through the ages and still continue to favour in spite of the difficulties of post-war housing, is a tradition to be proud of. In the past Holland also had a similar tradition, but for economic reasons, and especially owing to the nature of many of their sites, they are now departing from it.

I think that every member of the party will agree that the best housing examples we saw in Holland are those modelled on British garden villages. There was one on the outskirts at Oostzaan, Amsterdam, and another at Vreewijk, Rotterdam, which were especially pleasing. The Dutch use of bright colour in external paintwork is most attractive, and we might well copy a good deal of it with advantage at home.

As regards methods of construction, we inspected many varieties of concrete walling, including the much advertised "Coral-Beton" method at Amsterdam. This consists of an 8 to 1 mixture of poured concrete, the walling being 8 inches thick, without cavity. The theory explained was that the centre of the solid wall being of porous, granular concrete, when a waterproofed cement is used on the face, the houses are quite dry. The general opinion of the party was that the system as we saw it would not be suitable for conditions in this country. Brickwork still holds the field in Holland as the best method of walling, and we gathered that concrete substitutes had been adopted there for much the same reason as we have adopted them—to bring down the cost of brickwork. Dutch bricks are world-famed, and their size and texture are delightful. Now that the abnormal shortage of dwellings has been made up, it is to be hoped that they will continue to be the principal material used for house building.

The report of a sub-committee appointed by the Housing Council during the visit to Holland for the purpose of obtaining exact data regarding important matters may be consulted in the R.I.B.A. Library.

Our thanks are due to Mr. Van Der Kaa, State Inspector of Housing, and to the various other State and municipal officials who extended such courtesy and gave so much valuable information to the delegates.

Mr. Arthur Stratton, F.S.A., F.R.I.B.A., Reader in Architecture at the University of London, has been engaged for some years on the preparation of a work on *The Elements of Form and Design in Classic Architecture*. It is illustrated by 100 plates, comprising over 500 plans, elevations and perspectives from specially prepared drawings, together with a number of drawings by old masters. The book has a foreword by Professor A. E. Richardson, F.S.A., and will be issued immediately by Messrs. B. T. Batsford, Ltd.

Town Planning Schemes

In order that Members may be kept informed as to the position of Town Planning Schemes in course of preparation, the Ministry of Health have agreed to issue to the Royal Institute complete lists of schemes showing the stage reached by each.

The following lists have been published by the Ministry. Others as received will be printed in the R.I.B.A. JOURNAL.

Information on this matter will be published in the JOURNAL every three months with an identical heading to that of the Surveyors' Institution.

LIST OF LOCAL AUTHORITIES who are under statutory obligation to prepare Town Planning Schemes in respect of their areas, showing the stage reached in each case.

STAGE REACHED: EXPLANATORY NOTE.

This column indicates the position on 31 March 1925. Where this column is blank, the indication is that the Local Authority concerned has taken no effective steps in the matter of the preparation of a Town Planning Scheme.

"x" indicates that the Local Authority has passed a resolution deciding to prepare a Town Planning Scheme, or has been authorised by the Minister to prepare it.

"y" indicates the completion of the second stage, *i.e.*, that the Minister has approved a Preliminary Statement of proposals for development in connection with the Scheme.

"z" indicates the completion of the final stage, *i.e.*, that the Scheme itself has received the Minister's approval and become operative.

ENGLAND

	Stage Reached.
BEDFORDSHIRE	
Bedford M.B.	—
Luton M.B.	z
BERKSHIRE	
Reading C.B.	—
New Windsor M.B.	—
BUCKINGHAMSHIRE	
Chepping Wycombe M.B.	—
CAMBRIDGESHIRE	
Cambridge M.B.	y
CHESHIRE	
Altrincham U.D.	y
Birkenhead C.B.	x
Crewe M.B.	—
Chester C.B.—	
No. 1	x
No. 2	x
No. 3	x
Hyde M.B.	—
Macclesfield M.B.	—
Stalybridge M.B.	—
Stockport C.B.	x
Wallasey C.B.—	
No. 2	z
No. 3	y
No. 4	y
No. 1	x
CUMBERLAND	
Carlisle C.B.	—
Workington M.B.	—
DERBYSHIRE	
Derby C.B.—	
Area No. 1	x
Area No. 2	x
(Combined after passing of resolutions and proceeding as one scheme.)	
Derbyshire—contd.	
Alfreton U.D.	—
Chesterfield M.B.—	
No. 1	z
No. 1, amending	z
No. 2	x
Glossop M.B.	—
Heanor U.D.	—
Ilkeston M.B.	—
Swadlincote U.D.	—
DEVONSHIRE	
Exeter C.B.	x
Plymouth C.B.	—
Torquay M.B.	y
DORSET	
Poole M.B.	—
Weymouth and Melcombe Regis M.B.	—
DURHAM	
Darlington C.B.	x
Gateshead C.B.	—
South Shields C.B.	x
Sunderland C.B.	x
West Hartlepool C.B.	x
Blaydon U.D.	—
Felling U.D.	—
Hartlepool M.B.	—
Hebburn U.D.	—
Jarrow M.B.	—
Stanley U.D.	—
Stockton-on-Tees M.B.	x
ESSEX	
East Ham C.B.	—
Southend-on-Sea C.B.—	
Chalkwell Area	y
Wick Estate	x
North-Western Area	x
Eastern Area	x
Essex—contd.	
West Ham C.B.	—
Barking Town U.D.	—
Chelmsford M.B.	—
Colchester M.B.	—
Ilford U.D.	x
Leyton U.D.	—
Walthamstow U.D.	x
Woodford U.D.—	
No. 1	y
No. 2	x
GLOUCESTERSHIRE	
Bristol C.B.	—
Gloucester C.B.	—
Cheltenham M.B.	—
HEREFORDSHIRE	
Hereford C.B.	—
HERTFORDSHIRE	
St. Albans M.B.	—
Watford U.D.	—
KENT	
Canterbury C.B.	
Beckenham U.D.—	
Area No. 1	y
Area No. 2	y
Area No. 3	y
Bexley U.D.	—
Bromley U.D.	—
Chatham M.B.	
Dartford U.D.	x
Dover M.B.	—
Erith U.D.	—
Folkestone M.B.	—
Gillingham M.B.	—
Gravesend M.B.	—
Maidstone M.B.	x
Margate M.B.—	
Main Area	y
Supplementary area	y
Penge U.D.	—
Ramsgate M.B.	—
Rochester M.B.	x
Royal Tunbridge Wells M.B.	—
LANCASHIRE	
Barrow-in-Furness C.B.	x
Blackburn C.B.	x
Blackpool C.B.	x
Bolton C.B.	x
Bootle C.B.	x
Burnley C.B.	—
Bury C.B.	—
Liverpool C.B.—	
Allerton	x
Little Woolton	x
Much Woolton	x
Oak Hill Park	x
Mossley Hill	x
Manchester C.B.—	
Scheme "A"	x
South Manchester, Scheme "B"	x
Oldham C.B.	—
Preston C.B.—	
No. 1 Scheme	x
No. 2 Scheme	x
Rochdale C.B.—	
Area No. 1	z
Area No. 2	x
Area No. 3	x
St. Helens C.B.	—
Salford C.B.	x
Southport C.B.—	
No. 1	x
No. 2	x
Lancashire—contd.	
Warrington C.B.	x
Wigan C.B.	x
Accrington M.B.	—
Ashton-in-Makerfield M.B.	—
Bacup M.B.	x
Chadderton U.D.	x
Chorley M.B.	x
Colne M.B.	x
Darwen M.B.	—
Eccles M.B.	—
Farnworth U.D.	x
Heywood U.D.	x
Hindley U.D.	x
Ince-in-Makerfield U.D.	x
Lancaster M.B.	—
Leigh M.B.	—
Middleton M.B.—	
South	y
North	x
Nelson M.B.	x
Radcliffe U.D.	—
Rawtenstall M.B.	x
Stretford U.D.	y
Swinton and Pendlebury U.D.	x
Waterloo-with-Seaforth U.D.	—
Widnes M.B.	—
LEICESTERSHIRE	
Leicester C.B.—	
Scheme No. 1	—
Scheme No. 2	x
Scheme No. 3	x
Coalville U.D.	—
Loughborough M.B.	—
LINCOLNSHIRE	
Grimsby C.B.—	
Area No. 1	x
Area No. 2	x
Area No. 3	x
Lincoln C.B.	x
Cleethorpes-with-Thurnscoe U.D.—	
No. 1, including land in Grimsby R.D.	y
No. 2, wholly in U.D.	y
Scunthorpe and Frodingham U.D.	x
LONDON (LONDON COUNTY COUNCIL, RESPONSIBLE AUTHORITY)	
L.C.C. No. 1—	
Met. Borough of Wandsworth, part	y
L.C.C. No. 2—	
Met. Boroughs of Greenwich, Lewisham and Woolwich, parts	x
MIDDLESEX	
Acton M.B.—	
Areas 1 and 2	x
Area No. 3	x
Chiswick U.D.—	
Riverside Lands	z
Main Area	x
Ealing M.B.	y
Edmonton U.D.	x
Enfield U.D.	—
Finchley U.D.	x

	Stage reached.
Middlesex—contd.	
Hanwell U.D.—	
Main Area ..	x
Detached Area ..	y
Hendon U.D.	x
Heston and Isleworth U.D.	x
Hornsey M.B.	—
Southall-Norwood U.D.	x
Southgate U.D. ..	x
Teddington U.D. ..	—
Tottenham U.D. ..	—
Twickenham U.D. ..	x
Willesden U.D.—	
Main Area	y
Supplementary scheme	x
Wood Green U.D. ..	x
Wembley U.D.—	
No. 1	x
No. 2	x
MONMOUTHSHIRE	
Newport C.B.—	
East Usk Area ..	x
Liswerry Area ..	x
Corporation Road Area	x
Abercarn U.D.	x
Abersychan U.D. ..	—
Abertillery U.D. ..	—
Bedwellty U.D. ..	x
Ebbw Vale U.D. ..	—
Tredegar U.D.	—
NORFOLK	
Great Yarmouth C.B. ..	y
Norwich C.B.	x
NORTHAMPTONSHIRE	
Northampton C.B. ..	x
Kettering U.D.	—
Wellingborough U.D. ..	—
Newcastle-upon-Tyne C.B.—	
Craghall Dene Area	x
Eastern Area ..	x
North-Eastern Area	x
Western Area ..	x
Tynemouth C.B.—	
No. 1, wholly in C.B.	x
No. 2, including land in Whitley and Monkseaton U.D.	x
Ashington U.S. ..	—
Bedlingtonshire U.D. ..	—
Blyth U.D.	x
Wallsend M.B.—	
Area No. 1	x
Area No. 2	x
Area No. 3	x
Whitley and Monkseaton U.D.	x
NOTTINGHAMSHIRE	
Nottingham C.B. ..	x
Mansfield M.B.	x
Sutton-in-Ashfield M.B.	—
Worksop U.D.	—
OXFORDSHIRE	
Oxford C.B.—	
General Scheme ..	x
Special Area No. 1 under 1923 Act ..	x
Special Area No. 2 under 1923 Act ..	x
SOKE OF PETERBOROUGH	
Peterborough M.B. ..	—
SHROPSHIRE	
Shrewsbury M.B. ..	—
SOMERSETSHIRE	
Bath C.B.	—
Taunton M.B.	—
Weston-super-Mare U.D.	—

	Stage reached.
SOUTHAMPTON (HAMPSHIRE)	
Bournemouth C.B.—	
Boscombe and Southbourne	x
Southbourne ..	x
Portsmouth C.B. ..	—
Southampton C.B. ..	—
Aldershot U.D.	—
Gosport and Alverstoke U.D.	—
Winchester M.B. ..	—
STAFFORDSHIRE	
Burton-upon-Trent C.B.	—
Smethwick C.B. ..	—
Stoke-upon-Trent C.B.—	
Area No. 1, Eastern	x
Area No. 2	x
Walsall C.B.	—
West Bromwich C.B. ..	—
Wolverhampton C.B. ..	—
Bilston U.D.	—
Cannock U.D.	—
Coseley U.D.	—
Newcastle-under-Lyme M.B.	—
Rowley Regis U.D. ..	—
Stafford M.B.	—
Tipton U.D.	—
Wednesbury M.B. ..	—
Wolstanton United U.D.	—
SUFFOLK (EAST)	
Ipswich C.B.	x
Lowestoft M.B. ..	—
SURREY	
Croydon C.B.—	
South	z
North	x
East and Addington	y
East and Addington, additional Area ..	x
Barnes U.D.	x
Coulsdon and Purley U.D.	y
Guildford M.B.—	
General Scheme ..	x
Supplementary Scheme	x
Kingston-on-Thames M.B.	—
Mitcham U.D. ..	y
Reigate M.B.	—
Richmond M.B. ..	x
Sutton U.D.	x
Wimbledon M.B. ..	—
Woking U.D.	—
SUSSEX (EAST)	
Brighton C.B.	—
Eastbourne C.B. ..	—
Hastings C.B.	x
Bexhill M.B.	—
Hove M.B.	—
SUSSEX (WEST)	
Worthing M.B. ..	x
WARWICKSHIRE	
Birmingham C.B.—	
Quinton and Harborne	z
East	z
North Yardley ..	z
Birmingham C.B.—	
East, amending ..	z
South	z
South-west ..	x
North-west	x
Coventry C.B.	—
Nuneaton M.B.	—
Leamington Royal Spa M.B.	y
Rugby U.D.	—
Sutton Coldfield M.B. ..	x
WILTSHIRE	
Salisbury M.B.	—
Swindon M.B.	—

	Stage reached
WORCESTERSHIRE	
Dudley C.B.	—
Worcester C.B.	—
Kidderminster M.B. ..	—
Oldbury U.D.—	
Warley Area ..	x
Halesowen Area ..	x
YORKSHIRE (EAST RIDING)	
Kingston-upon-Hull C.B.—	
South-east Hull ..	y
N.E. Hull and Sutton	y
Bridlington M.B. ..	x
YORKSHIRE (NORTH RIDING)	
Middlesbrough C.B. ..	—
Eston U.D.	—
Scarborough M.B.—	
Scheme No. 1 ..	x
Scheme No. 2, Western	x
Scheme No. 3 ..	x
Scheme No. 4, Northern ..	x
YORKSHIRE (WEST RIDING)	
Barnsley C.B. ..	—
Bradford C.B.—	
Scheme No. 1 ..	y
Scheme No. 2 ..	y
Scheme No. 3 ..	x
Scheme No. 4 ..	x
Scheme No. 5 ..	x
Scheme No. 6 ..	x
Scheme No. 7 ..	x
Scheme No. 8 ..	x
Scheme No. 9 ..	x
Scheme No. 9A ..	x
Dewsbury C.B.	
Halifax C.B.—	
No. 1	y
No. 2	y
No. 3	y
CARMARTHENSHIRE	
Llanelly M.B.	—
GLAMORGANSHIRE	
Cardiff C.B.—	
Central Area ..	x
Central Area "A"	x
Roath	x
Western	x
Penylan	x
Cathways Park ..	x
Cyn-Coed	x
Merthyr Tydfil C.B. ..	—

	Stage reached.
Huddersfield C.B.—	
Scheme A	x
Scheme B	x
Scheme C	x
Scheme D	x
Scheme E	x
Scheme F	x
Scheme G	x
Leeds C.B.—	
Buckingham House	z
No. 2	x
No. 3	x
No. 6	y
No. 4	x
Rotherham C.B. ..	—
Sheffield C.B.—	
Area No. 1 ..	y
Area No. 4 ..	y
Area No. 5 ..	y
Area No. 6 ..	y
Unnumbered ..	y
(South-west Town Planning Scheme.)	
Area No. 2A ..	x
Area No. 3 ..	x
Area No. 10 ..	x
Wakefield C.B.	x
Batley M.B.	—
Brighouse M.B. ..	—
Castleford U.D. ..	—
Doncaster M.B. ..	x
Harrogate M.B. ..	—
Keighley M.B.	—
Morley M.B.	—
Shipley U.D.	x
Spenborough U.D. ..	—
Todmorden M.B. ..	—
YORKSHIRE	
York C.B.—	
Area No. 4—Bishopsthorpe	y
Area No. 2 ..	x
WALES.	
Glamorganshire—contd.	
Swansea C.B.	—
Aberdare U.D.	—
Barry U.D.	—
Caerphilly U.D. ..	—
Gellygaer U.D.	x
Maesteg U.D.	—
Mountain Ash U.D. ..	—
Ogmore and Garw U.D.	—
Pontypridd U.D. ..	—
Rhondda U.D.	—
Port Talbot M.B. ..	—

LIST OF LOCAL AUTHORITIES, not being authorities under statutory obligation to prepare Town Planning Schemes, who have voluntarily taken effective steps in the preparation of a Scheme, showing the stage reached in each case.

STAGE REACHED: EXPLANATORY NOTE.

This column indicates the position on 31 March 1925. Where this column is blank, the indication is that the Authority concerned has either (*a*) passed a resolution deciding to prepare a Scheme; or (*b*) received the Minister's authorisation to prepare a Scheme.

"y" indicates that the Preliminary Statement of proposals for development has been approved by the Minister.

"z" indicates that the Scheme itself has been finally approved and become operative.

ENGLAND

CHESHIRE	
Ashton-on-Mersey U.D.C.	—
Bredbury and Romiley U.D.C.	—
Cheadle & Gatley U.D.C.	—
Cheshire—contd.	
Ellesmere Port and Whitby U.D.C.	—
Hale U.D.C.	—
Handforth U.D.C. ..	—

Cheshire—contd.	Stage reached
Hazel Grove and Bramhall U.D.C.	—
Hoylake and West Kirby U.D.C.	—
Marple U.D.C.	—
Neston and Parkgate U.D.C.	—
Northwich U.D.C.	—
Bucklow R.D.C.—	
Three parishes and part of a fourth	—
Additional area	—
Wirral R.D.C.—	
Area No. 1	—
Area No. 2	—
Area No. 3	—
Area No. 4	—
Area No. 5	—
Areas Nos. 6, 7 and 8 combined	—
DERBYSHIRE	
Norton R.D.C.	—
Buxton M.B.C.	—
DEVONSHIRE	
Totnes M.B.C.	—
Sidmouth U.D.C.	—
Honiton R.D.C.—	
Salcombe Regis and Sidbury	—
Salcombe Regis, additional	—
Plympton St. Mary R.D.C.	—
DURHAM	
South Shields R.D.C.	—
ESSEX	
Grays Thurrock U.D.C.	—
Loughton U.D.C.	y
Romford U.D.C.	—
Romford R.D.C.	—
Harwich M.B.C.	—
Tilbury U.D.C.	—
Orsett R.D.C.	—
Rochford R.D.C.—	
South Benfleet and Thundersley	y
Rawreth	—
Canvey Island	—
Rayleigh	—
Eastwood	—
HERTFORDSHIRE	
Barnet U.D.C.	—
Berkhampstead R.D.C.	—
East Barnet Valley U.D.C.	—
Great Berkhampstead U.D.C.	—
Hitchin U.D.C.	—
Rickmansworth U.D.C.—	
First Scheme	—
Lands transferred to U.D. by Provisional Order in 1924	—
KENT	
Blean R.D.C.—	
No. 1, in Blean R.D.	—
No. 2, detached areas in Faversham R.D.	—
Bridge R.D.C.	—
Bromley R.D.C.	—
Eastry R.D.C.	—
Sevenoaks R.D.C.	—
Sidcup U.D.C.	—
LANCASHIRE	
Atherton U.D.C.	—

Lancashire—contd.	Stage reached
Fleetwood U.D.C.	—
Formby U.D.C.	—
Great Crosby U.D.C.—	
Scheme No. 1	y
Scheme No. 2	—
Kearsley U.D.C.	—
Little Hulton U.D.C.	—
Morecambe M.B.C.	—
Newton - in - Makerfield U.D.C.	—
Poulton-le-Fylde U.D.C.	—
Thornton U.D.C.	y
Worsley U.D.C.	—
Barton-upon-Irwell R.D.C.—	
Davyhall No. 1	—
Davyhall No. 2	—
Flixton	—
Warrington R.D.C.	—
Tyldesley-with-Shakerley U.D.C.	—
Droylsden U.D.C.	—
Preesall U.D.C.	—
Prestwich U.D.C.—	
Scheme No. 1	—
Areas excluded from No. 1	—
Turton U.D.C.	—
Westhoughton U.D.C.	—
Bury R.D.C.	..
Abram U.D.C.	—
Crompton U.D.C.	—
Milnrow U.D.C.	—
Whitefield U.D.C.	—
Sefton R.D.C.	—
Litherland U.D.C.	—
LEICESTERSHIRE	
Market Harborough U.D.C.	—
LINCOLNSHIRE (PARTS OF LINDSEY)	
Grimsby R.D.C.—	
Area No. 1	—
Area No. 2	—
Area No. 3	—
Area No. 4	—
MIDDLESEX	
Brentford U.D.C.	—
Feltham U.D.C.	—
Harrow-on-the-Hill—	
First Scheme	—
Supplementary Scheme	—
Kingsbury U.D.C.	—
Ruislip-Northwood U.D.C.—	
Principal Scheme	z
Scheme No. 2	—
Sunbury-on-Thames U.D.C.	—
See List "A"	—
Hendon R.D.C.—	
*Pinner and Harrow Weald	—
*Stanmore and Edgware	—
Hayes U.D.C.	—
Friern Barnet U.D.C.	—
Uxbridge R.D.C.	—
MONMOUTHSHIRE	
Bedwas and Machen U.D.C.	—
NORTHUMBERLAND	
Earsdon U.D.C.	y
Gosforth U.D.C.	—
Longbenton U.D.C.	—
Newburn U.D.C.	—
Seaton Delaval U.D.C.	y

NOTTINGHAMSHIRE	Stage reached
Mansfield Woodhouse U.D.C.	—
Beeston U.D.C.	—
Carlton U.D.C.	—
Hucknall U.D.C.	—
West Bridgford U.D.C.	—
Basford R.D.C.	—
Leake R.D.C.	—
Southwell R.D.C.—	
No. 1, in Mansfield Joint Committee's Area	—
No. 2, in Nottingham Joint Committe's Area	—
Arnold U.D.C.	—
Eastwood U.D.C.	—
Bingham R.D.C.	—
Stapleford R.D.C.	—
SURREY	
Beddington and Wallington U.D.C.	—
Carshalton U.D.C.	—
Esher and The Dittons U.D.C.—	
First Scheme	—
Second Scheme	—
The Maldens and Coombe U.D.C.	—
Ham U.D.C.	—
Merton and Morden U.D.C.	—
Surbiton U.D.C.—	
First Scheme	—
Second Scheme	—
Walton-upon-Thames U.D.C.	—
Epsom R.D.C.—	
Cheam Parish	—
Banstead Parish	—
SUSSEX	
Southwick U.D.C.	—
Steyning East R.D.C.	—
Steyning West R.D.C.	—
WARWICKSHIRE	
Stratford-upon-Avon M.B.C.	—
Warwick R.D.C.—	
Stoneleigh	—
Bagington	—
Stoneleigh (additional)	—
WESTMORLAND	
Windermere U.D.C.—	
Area No. 1	—
Area No. 2	—

	Stage reached
WORCESTERSHIRE	
North Bromsgrove U.D.C.	z
Halesowen R.D.C.	—
YORKSHIRE (EAST RIDING)	
Riccall R.D.C.	—
Hornsea U.D.	—
YORKSHIRE (NORTH RIDING)	
Saltburn-by-the-Sea, U.D.C.	—
Scalby U.D.C.	—
Thornaby-on-Tees M.B.C.	—
Guisborough R.D.C.	—
YORKSHIRE (WEST RIDING)	
Adwick-le-Street U.D.C.	—
Baildon U.D.C.	—
Bentley-with-Arksey U.D.C.	—
Bingley U.D.C.	—
Clayton U.D.C.	y
Elland U.D.C.—	
*No. 1	y
*No. 2	y
Norbury U.D.C.	—
Knaresborough U.D.C.	—
Linthwaite U.D.C.	y
Otley U.D.C.	z
Selby U.D.C.	—
Doncaster R.D.C.—	
Askern Area	—
Carcraft Area	—
Armthorpe Area	—
Hunslet R.D.C.—	
Templenewsam No. 1	z
Templenewsam No. 2	—
Oulton-with-Woodlesford No. 1	—
Oulton-with-Woodlesford No. 2	—
Rotherham R.D.C.—	
Laughton No. 1	—
Laughton No. 2	—
Treeton and District	—
Wickersley	—
Brampton Bierlow	—
Wharfedale R.D.C.	—
Burley-in-Wharfedale U.D.C.	—
Birstall U.D.C.	—
Springhead U.D.C.	—
Tadcaster R.D.C.	—
Saddleworth U.D.C.	—

WALES

DENBIGHSHIRE	
Wrexham M.B.C.—	
*No. 1	y
*No. 2	y
Wrexham R.D.C.—	
Stansty, etc.	—
Broughton, etc.	—
Llay	—
FLINTSHIRE	
Hawarden R.D.C.	—
GLAMORGANSHIRE	
Bridgend U.D.C.	—
Neath M.B.C.—	
Part of Borough	—
Glamorganshire—contd.	
Llantwit Lower, in Neath R.D.	—
Porthcawl U.D.C.	—
Cardiff R.D.C.—	
Scheme No. 2	—
Scheme No. 3	—
Cowbridge R.D.C.	—
Penarth U.D.C.	—
Penybont R.D.C.—	
Llangynwyd Middle	—
Newcastle Higher, etc.	—
Kenfig, etc.	—

* Combined and proceeding as one Scheme.

Obituary

M. J. T. HOMOLLE (HONORARY CORRESPONDING MEMBER).

It is with great regret that we have to announce the death of the distinguished French archæologist *M.* J. T. Homolle. In the course of a letter of appreciation of M. Homolle, published in *The Times* on 17 June, Sir Charles Walston writes :

I have just received the sad news of the death of M. Jean Theophile Homolle, in the seventy-sixth year of his most active and fruitful life in the cause of archæology, art, and general culture.

Homolle, as the excavator of Delos and Delphi, was perhaps the most eminent, learned and prolific of the great excavators of the past who have all died within recent years, among whom we must single out Hirschfeld and Trew (assisted by Furtwängler), who directed the German excavations of Olympia. In your issue of 3 February last appeared an obituary note on J. C. Hoppin, the eminent American archæologist, who, as one of my assistants at the excavations of the Argive Heraeum had promised to make some further excavations on that site in the immediate future. The late Richard Norton and the late Professor De Cou were, with Hopping, my chief assistants at Argos.

But Homolle and his work stand above all these in eminence. He was a student of the Ecole Normale in 1869, and then advanced to be a member of the School at Athens, of which, for many years, he was the Director. Before being appointed Director in 1891, he was for six years Professeur Suppléant at the College de France. He began the excavations of Delos in 1877, and carried them on until 1902, when his pupil, and subsequently his successor at Athens, M. Holleaux, completed them.

It was in 1892 that he began the direction of the great excavations at Delphi, at which Foucart and Haussoullier had already done preparatory work. It was during that period that I learnt to appreciate his high-minded generosity of spirit, for we were then rivals. Before 1892 it had been made clear to me that the French had no chance of gaining the concession to excavate Delphi. I then endeavoured to secure this concession for the American School, and notified my French colleagues and friends of my intention, agreeing to relinquish our claim should the French have any chance of success. Subsequently the French were successful and Homolle directed the great work.

Upon retiring from the School of Athens in 1904, Homolle was appointed Director of the National Museums, including the Louvre. It was during this tenure of office that, while he was away on his holiday, Leonardo's " La Gioconda " was stolen (and has since been restored). Homolle went back for a time to the School at Athens, and was then, in 1913, transferred to the headship of the great Bibliothèque Nationale of Paris, from which he only resigned a year ago.

PROPOSED " R.I.B.A. TRAVELLING STUDENTSHIP " TO MESOPOTAMIA.

The Excavations at Ur.

The following letter has been received by the Secretary of the Institute :—

Dear Mr. MacAlister,—I have been very much interested in what you tell me about the work which Mr. Leonard Woolley hopes to do at Ur, in the course of the coming winter. He appears to have in immediate prospect a piece of excavation which promises results of the greatest interest and importance, not only to archæologists and historians, but to architects and historians of architecture. The fascinating possibilities that are opened up by the exploration of what may turn out to be the Royal Palace of Ur ought to excite the enthusiastic interest of all who are concerned with the early history of our Art.

I understand that it will be of the greatest help to Mr. Woolley if he can be accompanied by a well-trained young architect to assist him on the technical side of the work. The sad loss of Mr. Francis Newton created a vacancy which it is the duty of the architectural profession to fill. I understand also that you have found an enthusiastic young architect with the necessary qualifications who is prepared to go out in the coming winter as Mr. Woolley's architectural assistant if the necessary funds can be provided.

I am anxious to help in this matter, and I should like to offer the sum of 40 guineas as the nucleus of a fund for providing the required sum of £400 which will enable the R.I.B.A. to send out this young architect as an " R.I.B.A. Travelling Student " to Mesopotamia.* I hope you will have no difficulty in obtaining other contributions which will rapidly provide the full amount required.—Yours very truly,

Halstead Best [F.].

St. John's Chambers, 87, *Church Street*,
Blackpool, 8 *June* 1925.

* The Council of the Institute have approved of this Travelling Studentship, contributions to which will be gladly received by the Secretary.

A.B.S. SCHEME OF PROFESSIONAL INSURANCE.

Insurance to-day is a very complicated business and too much care cannot be exercised in the choice of an insurance company and of a policy. If, however, architects consult the Insurance Committee of the Architects' Benevolent Society, they are sure of obtaining competent guidance in all insurance matters. Especially favourable terms are secured by the Society, and every insurance negotiated through its agency results in a direct contribution to the Benevolent Fund. Enquiries should be addressed to the Secretary, A.B.S., 9 Conduit Street, W.

NOTES FROM THE MINUTES OF THE COUNCIL MEETING.

8 June 1925.

The R.I.B.A. Visiting Board.

The Report of the Board on the Department of Architecture, Surveying and Building of the Northern Polytechnic was approved by the Council and certain exemptions from the Intermediate Examination of the R.I.B.A. will be granted to students of this school.

L.C.C. Scholarships in Architecture.

As a result of representations made by the R.I.B.A. Conference on Prizes, the London County Council have decided that all applications for L.C.C. Scholarships in Architecture shall be referred to the Board of Architectural Education for a report on their order of merit.

The Manchester Society of Architects.

The new Articles of Association of the Manchester Society of Architects were approved by the Council under Bye-law 82.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS AND THE SOCIETY OF ARCHITECTS.

At a meeting held on 18 June 1925, at 28, Bedford Square, the final stage of the amalgamation of the Royal Institute of British Architects and the Society of Architects was successfully completed.

The resolutions authorising the winding-up of the Society of Architects and the transfer of its surplus property to the R.I.B.A. were confirmed, and the process of voluntary liquidation will now begin.

The members of the Society have been transferred to the R.I.B.A.

It is proposed to celebrate the occasion, which is one of the greatest importance to the architectural profession, by entertaining the members of both bodies, now united, and their friends at a reception, which will probably be held in the R.I.B.A Galleries in the early autumn.

BRITISH SCHOOL AT ROME.

Dr. Ashby's Retirement.

On the occasion of the retirement of Dr. Thomas Ashby from the Directorship of the British School at Rome, the Council of the Royal Institute of British Architects have passed a special resolution expressing their appreciation of Dr. Ashby's valuable services to Architecture, to Architects, and to Students of Architecture during his long tenure of this position.

NEW R.I.B.A. COUNCIL.

Professor R. M. Butler, F.R.I.B.A., has been appointed to represent the Royal Institute of the Architects of Ireland on the Council of the Royal Institute of British Architects.

In response to an inquiry with regard to the speech which Professor Beresford Pite made after the reading of Mr. Topham Forrest's paper on "The Architectural Development of American Cities" on 18 May, it should have been pointed out that the speech was published in the previous issue of the Journal, p. 258, under the title of the "Annual Convention of the American Institute of Architects," to which Professor Pite's remarks largely referred.

Notices

ELECTION OF MEMBERS, 30 NOVEMBER 1925.

Associates who are eligible and desirous of transferring to the Fellowship class are reminded that if they wish to take advantage of the election to take place on 30 November 1925 they should send the necessary nomination forms to the Secretary R.I.B.A. not later than 3 October.

LICENTIATES AND THE FELLOWSHIP.

The attention of Licentiates is called to the provisions of Section IV., clause 4 (6) and (c. ii) of the Supplemental Charter of 1925. Licentiates who are eligible and desirous of transferring to the Fellowship can obtain full particulars on application to the Secretary R.I.B.A.

HOLBROOK SCHOOL COMPETITION.

By permission of the Board of Admiralty the designs submitted by the competitors in the competition for the Royal Hospital School, Holbrook, near Ipswich, will be exhibited in the galleries of the R.I.B.A., 9, Conduit Street, London, W.1, from Tuesday, 30 June, to Saturday, 4 July 1925 inclusive. (Hours: 10 a.m. to 7 p.m. Saturday 2 p.m.)

Designs submitted by the following competitors will be exhibited:

Messrs. Adshead, Topham and Adshead.
Messrs. Buckland and Haywood.
Mr. E. Vincent Harris.
Messrs. W. and T. R. Milburn.
Messrs. Nicholas and Dixon Spain.
Messrs. Marshall Mackenzie and Son.

THE R.I.B.A. STATUTORY EXAMINATION.

The attention of architectural students is called to the Statutory Examination of the Royal Institute of British Architects. The Building Acts require every candidate for a District Surveyorship to hold the certificate of competency of the Royal Institute of British Architects.

In addition to certificates of competency for the office of District Surveyor under the Metropolitan Building Acts, certificates of competency for Building Surveyors under the Public Health Acts are also granted.

The Royal Institute of British Architects Examination qualifying for candidature as a Building Surveyor under Local Authority has recently been adopted by the Building Surveyors' Association as the examination for membership of their Association.

The Royal Institute of British Architects Statutory Examination was started in 1856, and from that date to 1914 an average number of five candidates passed each year. From the list of these candidates it is seen that many Architects in the past have sat for it who have never applied for a District Surveyorship or for a Building Surveyorship, but have taken the Examination as a qualification for private practice.

A knowledge of the Building Acts is of great use to provincial Architects, as well as to Architects practising in the metropolitan area. It is often found that when provincial Architects start building in London, their designs have to be modified to meet the requirements of the London Building Acts.

The Examination is a thorough test of a knowledge of the Building Acts and Building Construction, and requires a careful study of these subjects, with which every Architect ought to be acquainted.

Ian MacAlister, *Secretary*.

THE R.I.B.A. ANNUAL CONFERENCE

NEWCASTLE AND DURHAM.

8 TO 11 JULY 1925.

All members and students of the R.I.B.A. and all members of the Architectural Association and of the Allied Societies are cordially invited to attend the Conference (see full particulars enclosed with the issue of the JOURNAL on 13 June).

Members of the R.I.B.A. and Allied Societies who propose attending the Conference are reminded of the following railway travelling facilities that are available:

From London to Durham a tourist ticket is issued, available for two months and with facilities for breaking the journey at all important points, for 58s. 3d. (3rd class).

From London to Newcastle the ordinary return fare is 37s. 10d.; but members could take a tourist ticket to Whitley Bay for 68s., enabling them to break their journey at Newcastle either going or returning, and by which they can, if desired, go on to the coast at any time within the period of two months.

Mr. Alfred Myers, railway agent, of 343, Gray's Inn Road, London, W.C., will be pleased to advise members who propose travelling from London and other centres, and also to issue tickets and book seats on application to him.

Competitions

SEVENOAKS U.D.C. HOUSING COMPETITION.

Members of the Royal Institute of British Architects must not take part in the above Competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

PROPOSED FIRE AND POLICE STATION, NEWCASTLE-UPON-TYNE.

Premiums £500, £300 and £100 respectively are offered. Assessor Mr. Percy S. Worthington, F.R.I.B.A. Conditions may be obtained on or before 4 July 1925 by depositing £2 2s. Designs to be sent in not later than 8 October 1925. Apply A. M. Oliver, Town Clerk, Town Hall, Newcastle-upon-Tyne.

MORLEY WAR MEMORIAL COMPETITION.

Members of the Royal Institute of British Architects must not take part in the above Competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

COVENTRY HOSPITAL COMPETITION.

The Competitions Committee desire to call the attention of Members to the fact that the Conditions of the above Competition are not in accordance with the Regulations of the R.I.B.A. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime Members are advised to take no part in the competition.

WOLVERHAMPTON AND STAFFORDSHIRE HOSPITAL.

Proposed out-patient and casualty department, to be erected in Cleveland Road, Wolverhampton. Assessor, Mr. T. R. Milburn, F.R.I.B.A. Premiums £200, £150 and £100. Last day for questions, June 27th. Designs to be sent in not later than September 5th, 1925. Conditions obtainable by depositing £1 1s.

GOWER R.D.C. HOUSING COMPETITION.

Members of the Royal Institute of British Architects must not take part in the above Competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

PROPOSED EXTENSION TO THE SHIREHOUSE, NORWICH.

Closing date for receiving designs 1 July 1925. Assessor, Mr. Godfrey Pinkerton, F.R.I.B.A. Premiums £150, £100, and £50. Apply to the Clerk of the County Council, Shire Hall, Norwich.

COMPETITION FOR A HIGH BRIDGE OVER COPENHAGEN HARBOUR.

Copenhagen Municipality hereby invite participation in an International Competition in connection with a High Bridge over Copenhagen Harbour.

The Municipality have set apart a sum of 35,000 kroner to be expended in prizes. There will be three prizes, the value of which will be fixed by a Judgment Committee consisting of Members of the Council, together with technicians chosen by the Municipality, the (Danish) Institute of Civil Engineers and the (Danish) Society of Architects. The largest prize will be at least 15,000 kroner.

Programme and particulars in Danish and English can be procured after 1 February 1925, from the City Engineer's Office, Town Hall, Copenhagen B, against a deposit of kr. 100.

The deposit is repayable after the judging, or previously if the drawings, particulars, etc., are returned in good condition. Projects to be delivered to the City Engineers Directorate, Town Hall, before mid-day, 1 September 1925.

After judgment the competing projects will be publicly exhibited at the Town Hall, Copenhagen.

LEAGUE OF NATIONS.

COMPETITION FOR THE SELECTION OF A PLAN WITH A VIEW TO THE CONSTRUCTION OF A CONFERENCE HALL FOR THE LEAGUE OF NATIONS AT GENEVA.

The League of Nations will shortly hold a competition for the selection of a plan with a view to the construction of a Conference Hall at Geneva. The competition will be open to architects who are nationals of States Members of the League of Nations.

An International Jury consisting of well-known architects will examine the plans submitted and decide their order of merit.

A sum of 100,000 Swiss francs will be placed at the disposal of the Jury to be divided among the architects submitting the best plans.

A programme of the Competition when ready will be despatched from Geneva, and Governments and competitors will receive their copies at the same time. Copies for distant countries will be despatched first.

The British Government will receive a certain number of free copies. These will be deposited at the Royal Institute of British Architects, and application should be made to the Secretary, R.I.B.A., 9, Conduit Street, W.1, by intending competitors.

Single copies can be procured direct from The Secretary-General of the League of Nations at Geneva, for the sum of 20 Swiss francs, payable in advance, but will not be forwarded until after the Government copies have been despatched.

On the nomination of the President of the Royal Institute, Sir John Burnet, A.R.A., has been appointed as the British representative on the Jury of assessors.

THE NEW INSTITUTE FOR THE BLIND, BUENOS AIRES, ARGENTINE REPUBLIC.

An International Competition has been promoted for the Argentine Institution for the Blind, Buenos Aires, Argentine Republic.

A small number of copies of the Conditions have been deposited in the R.I.B.A. Library for the information of British Architects who may desire to compete.

A booklet containing the full text of the conditions with other information (translated from the Spanish) and a plan of the ground on which the Institution is to be erected is available for inspection at the Department of Overseas Trade (Room 42), 35 Old Queen Street, London, S.W.1.

Members' Column

CHANGE OF ADDRESS.

Messrs. E. Keynes Purchase and Roland Welch have now moved their offices from 20 and 22 Maddox Street to 3 and 5 Maddox Street, W.1.

PRACTICE FOR SALE.

Architect's and Surveyor's Practice, old and well established, possessing valuable agencies, in Lancashire town, for sale. Owner contemplates early retirement for health reasons, will consider temporary partnership with succession on terms.—Box No. 6,890, c.o. The Secretary R.I.B.A., 9 Conduit Street, W.1.

Practice.—Established, in rapidly growing seaside resort, excellent modern offices, leading thoroughfare. Suit young Associate. Good reasons for disposal.—Box 1,965, c.o. The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

OFFICE ACCOMMODATION WANTED

A.R.I.B.A. repuires light offices, or would consider sharing suite. Westminster or West District. Please state full particulars with inclusive terms. Box 1011, c/o Secretary, R.I.B.A., 9 Conduit Street, W.1.

APPOINTMENT WANTED

L.R.I.B.A. (passed M.S.A. and other examinations), 20 years' London experience in busy offices, on all classes of work; public buildings, domestic work, factories, alterations, measuring up and surveys of existing buildings, drainage work, etc., has a few days per week to spare. Assist District Surveyor if required. Terms arranged. (London District.)—Reply Box 2365, c/o The Secretary, R.I.B.A., 9, Conduit Street, W.1.

Minutes XVI

Session 1924–25.

At the Sixteenth General Meeting (Ordinary) of the Session 1924–25, held on Monday, 22 June 1925, at 8.30 p.m., Mr. J. Alfred Gotch, President, in the chair, the attendance book was signed by 46 Fellows (including 18 members of the Council), 1 Associates (including 2 members of the Council), 6 Licentiate 4 Hon. Associates, and a large number of visitors.

The minutes of the meeting held on 8 June 1925, havin been published in the Journal, were taken as read, confirme and signed by the President.

The Honorary Secretary announced the decease of the fol lowing member :

Mr. William Thomas Margetts, elected Licentiate 1911.

On the motion of the Honorary Secretary it was

Resolved that the regrets of the Institute for the loss of thi member be recorded on the minutes of the meeting and that message of sympathy and condolence be conveyed to the rela tives.

The following members attending for the first time sinc their election or transfer were formally admitted by the Presi dent :

Messrs. Rodney H. Alsop [*F.*], Professor R. M. Butler [*F.*] H. L. Cabuche [*F.*], W. J. McWilliams [*F.*], Victor Wilkins [*F.*]

The President delivered an address on the presentation of th Royal Gold Medal to Sir Giles Gilbert Scott, R.A., LL.D.

Mr. Cass Gilbert (Hon. Corresponding Member), Past Presi dent of the American Institute of Architects, and Mr. D Everett Waid, President of the American Institute of Architects also spoke.

Having been invested with the medal, Sir Giles Gilbert Scot expressed his thanks for the honour conferred upon him anc delivered a brief address.

On the motion of Mr. E. Guy Dawber, Vice-President, a vote of thanks was passed by acclamation to the outgoing President for the important services he has rendered to the Institute and the profession during his tenure of office.

The President having responded, the proceedings terminated at 9.15 p.m.

At a Special General Meeting of the Session 1924–25, held on Monday, 22 June 1925, immediately after the Ordinary General Meeting above recorded and similarly constituted, with the exception of the guests who had been requested to retire the President announced that the meeting had been summoned for the purpose of confirming the following resolutions passed at the Special General Meeting held on 8 June 1925 for the amendment of Bye-law 29.

(1) That Bye-law 29 (*d*) be amended by the addition of the following words :

" Provided always that in the event of the representative nominated by any such Society being absent from the United Kingdom such Society shall be entitled to nominate a member of the Council of the Royal Institute for the time being who is practising in the United Kingdom to represent it upon the Council during the absence of the representative first so nominated as aforesaid."

(2) That Bye-law 29 be amended by the addition of the following words after paragraph (*g*) :

" (*h*) The chairman for the time being of each of the four Standing Committees referred to in Bye-law 52."

(3) That the necessary steps be taken to obtain the sanction of the Privy Council to such additions to Bye-law 29 as are required to give effect to these resolutions.

The confirming resolution was moved from the chair and passed by a unanimous vote.

The Special General Meeting then terminated.

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Architects and the Public

BY SIR THEODORE MORISON, K.C.S.I., K.C.I.E., C.B.E., M.A., VICE-CHANCELLOR OF THE UNIVERSITY OF DURHAM

(Address delivered at the Inaugural Meeting of the British Architects' Conference, Newcastle-upon-Tyne, on Thursday, 9 July 1925)

I AM sure that in your conference you will debate many questions of importance, but I trust that you may spare some hours from serious business to visit the locality of which Newcastle is the nerve centre. I believe that you will find in it much to interest you, for you are in a neighbourhood which has a long architectural history. From Newcastle you may visit the remains of the Great Wall which marked the farthest confines of the Roman Empire; you may inspect the site of the rude cell in which St. Cuthbert kept alight the lamp of Christianity on the Farne Islands—still a sanctuary indeed, but consecrated now to the puffin and the guillemot and other nesting sea birds. Near us, to the south, is that noble cathedral which Professor Prentout, who fills the Chair of Norman History at the University of Caen, presents to his students as the finest specimen of Norman architecture. By the railway station you have already noticed, I am sure, the historic keep from which the town takes its name, and in our streets and upon the quays you will find here and there some traces of the Middle Ages: a friary sadly fallen from its original splendour, and also houses of the guilds which once controlled the commerce and industry of the Tyne. But these you will have to hunt for, because the flood of modern industrialism has partially submerged these landmarks of our history, and we will strike you principally as a modern industrial city, occupied—no little occupied at present, I am sorry to say—with mechanical engineering, the building of giant steamers and the export of coal.

Now a modern industrial city presents to architects some very difficult problems to which we should like you to give thought. We must all acknowledge that the cities which we owe to the Industrial Revolution are sadly lacking in beauty. The age which gave man unexampled control over the forces of nature, which supplied architects with an embarrassing wealth of building material and possibilities of construction hitherto unimagined, contributed nothing to the charm of our cities. On the contrary, it has made most of them little better than grimy workshops from which the wealthier inhabitants hasten to get away. Why this lack of charm in modern towns? Is modern industry incompatible with beauty? These are the questions which I think architects and the public might discuss together with advantage. I am not going to bore you with a discussion on town-planning; for you certainly know much more upon that question than I do. Let it be agreed between us that we are suffering in part from remediable evils; that our towns

might be laid out much more wisely ; that smoke need not pollute our atmosphere ; let us assume that a wiser generation than ours will act instead of grumbling and build the clean and spacious towns which we might have if we wished. Nor am I going to ask you to consider how we can improve the humbler quarters of the town, those " drab, unlovely streets " in which the working classes are doomed to live. I want to concentrate attention upon a socially less important problem which concerns architects more nearly. The ugliness of which I complain is that in our principal thoroughfares, in the pretentious quarter of the city which pays high rates and in which land is bought by the foot. Here should be the buildings which we show to our visitors with pride as the ornament of the city ; yet this is the very quarter in which our modern failure is most apparent. I speak to you, gentlemen, in this discussion as a representative of the public, and I will begin by admitting frankly that for the want of beauty in our main thoroughfares the public, your clients, must bear the greater part of the blame. To my mind the main fault of our modern streets is the want of harmonious design ; taken separately, many of the buildings are well enough, but each of them, in too many towns, is of a different height and in a different style, and the effect of all taken together is nothing but discord. The street, not the single house, should be the unit of building, and the street should be planned as an architectural whole ; each building in it should be in harmony with the general design and should contribute to its realisation. Our streets are a riot of individualism ; each owner has indulged his particular taste or fancy ; very often his object has apparently been to be as bizarre and unlike his neighbours as possible. In one of the busiest thoroughfares of Newcastle I have counted in one block as many as eight different heights from the pavement to the parapet ; it is not a street at all, but a jumble of oddly assorted houses. In the past the prevalence of a great tradition, or possibly the authority of the architect in those days, was strong enough to curb the exuberant fancy of the private owner, and an architectural policy was followed in the construction of our streets. To this we owe the quiet dignity of Bath and the stateliness of the New Town of Edinburgh, and to my mind the merit of the Rue Castiglione and the Place Vendôme—to take only one example from that quarter of Paris—is due more to the design of the street than to the excellence of the individual buildings.

How can we get back to that better tradition ? How can we persuade the individual to subordinate his fancy to a general design. To educate the whole public would be a long business and might well fill you with despair. But our task is not really so serious as that. The people we want to influence are neither very numerous nor, I believe, very hard to convince. They are the owners of house property in the shopping quarter ; in most cases they belong to that part of the commercial community which is engaged in retail trade. They are keenly alive to the importance of making their property attractive, and they are not likely to be indifferent to our arguments. For, in brief, what we have to say is this : " The shopping quarter ought to be the most delightful part of the town ; it should be so pleasant that people would wander there for the mere pleasure of beholding it even when they did not propose to make purchases. And if you, the shopowners, will adopt our architectural policy we will make it a joy to go a-shopping." And indeed it is not fantastical to say that a beautiful aspect is a necessity for a shopping quarter. It is the incomparable view of Edinburgh Castle which has turned Princes Street into an uninterrupted line of shops ; the Rue de Rivoli possesses not only architectural dignity but the view of the Louvre and the Tuileries Gardens. Shops are beginning to invade the Place Vendôme as well as St. James's Square. I think we do not need to insist that good architecture pays the shopkeeper ; he knows it already and is ready to back his knowledge with money. What he has failed to grasp is that he cannot get full value for his expenditure unless he submits to a general design. A special effort would, I believe, be needed to bring this point of view before the commercial community ; we may assume, I suppose, that they do not read the architectural magazines with any regularity. An occasional article in the R.I.B.A. JOURNAL would not therefore effect much. I suggest to you that the proper course is that some distinguished architect who is filled with zeal for the improvement of his city should approach one or other of the professional societies into which the commercial community is organised ; they are in the habit of meeting in such societies to discuss their common interests, and I do not believe they would be

indifferent to a well-considered appeal to adopt a common policy with regard to building.

But if, gentlemen, you are prepared to make an appeal to the commercial public may I venture, with all humility, to suggest that you yourselves must be prepared to make some concessions to the necessities of this commercial age. In the modern world advertising is a necessity, and you will not make much impression upon men of business unless you frankly recognise that fact. In the past a too fastidious taste has prevented you from taking account of advertising. You have allowed advertising to fall into other less skilful hands. For your neglect you have paid a heavy penalty, for your noblest buildings have been defaced by monstrous gold letters which outrage the symmetry on which you spent so much thought. I hope I shall not offend the high-browed if I say that in the elevation of a commercial building you must take account of the need for publicity and make the inevitable lettering a part of your design. There is no reason why lettering should not be brought into harmony with architectural form and at the same time arrest the attention of the passer-by. In the East lettering is the most conspicuous and most beautiful decoration at the disposal of the Mahommedan architect. What could be more decorative than the verses of the Koran sculptured on a mosque? The majestic gateway of the Taj at Agra is covered with noble Arabic characters, and the chief ornament upon the tomb itself is to be found in the sacred texts inlaid in black marble. So highly did the Mahommedans prize this form of ornamentation that famous calligraphists were brought all the way from Shiraz to design the inscriptions upon the Taj.

From what I have seen with my own eyes I am convinced that lettering can not only be brought into harmony with an architectural design, but can add to its beauty.

No doubt you are all painfully familiar with the harm done to noble buildings by the unskilful advertiser. If you are not, a walk down one of the chief shopping streets of Newcastle will show you how completely his tasteless signs can ruin a good thoroughfare. But this is not the end of the tale of woe. The disfigurement of our streets by day is bad enough, but what invective can adequately stigmatise the advertisements of flashing light which make the night hideous? And for this I venture to take the architectural profession seriously to task. Was ever so great an opportunity missed? Had you taken charge of this new method of publicity you might have made even our modern cities beautiful at night. The illumination of a building can very easily produce a charming effect. Of that also I can vouch from Indian experience. In all the world there is no prettier festival than the Diwali, the Feast of Lamps. As soon as the sun has set little lights begin to glow on the parapet and along all the cornices of every Hindu house; every architectural feature is lit up so that the whole building is outlined in light. This fairy decoration, which I never saw without delight, is produced by the crudest means—merely a wick stuck into a rough clay saucer of oil—but the charm of it is beyond description. Why should we not produce the same effect? Our resources are immeasurably greater than those of Indian villagers, and there is a strong economic motive for making a shop, a restaurant or a cinema palace so beautiful that people will flock to see it. One attempt to make use of light as part of the normal decoration of a building at night I have seen recently in London—in the large Lyons restaurant at the top of the Haymarket. I thought the effect very attractive, but I have had no opportunity of examining it closely. I saw enough, however, to convince me that the illumination was part of the architect's design and to make me hope that other architects will make similar experiments.

The two points that I wish to make to you, then, are these: we must, firstly, persuade the owners of property in our shopping quarters that harmony of design is essential to the beauty of a street and that they must therefore agree, jointly and severally, to pursue one architectural policy. Secondly, the architects who design the elevations of mercantile buildings must make provision for publicity both by day and by night. If we could have our way on these two points I believe that we could make the opulent quarters of our industrial towns pleasant and beautiful. I am sure that our architects in modern England are capable of designing streets which it would be a pleasure to walk in and a joy to behold. I think the modern shop contains a great many elements of artistic pleasure which well deserve a noble setting. An unhealthy literary romanticism has made us believe that modern things are always vulgar and ugly. This is absurdly untrue; if we would only trust

the evidence of our senses and not call to mind what we have been taught to think about Art we should see that a shop window containing, say, a lady's hat and parasol, may be a very pretty thing, and that the ties, socks and fancy shirts of a modern hosier present a feast of colour quite as rich as the carpets and shawls of an Oriental bazaar.

I have confined my remarks to one quarter of the city; I believe if we could once show the public how beauty could be achieved in certain streets they would quickly adapt the principle in other areas. How to make the dwellings of working men more cheerful and more healthy is a larger and more serious problem, with which I do not venture to deal to-day; that is not primarily a problem for architects but for local authorities and the Ministry of Health; to deal with it would require consideration of national finance and economic policy for which this is not the occasion. My humbler task has been to suggest two points for discussion by architects and the public.

MR. E. GUY DAWBER (PRESIDENT R.I.B.A.) IN THE CHAIR.

Before Sir Theodore Morison's address the PRESIDENT, in welcoming members to the Conference, said:

Ladies and Gentlemen—It is very gratifying to find such a large attendance at this, the first meeting of the Conference. I am very pleased to say that we have with us the Presidents of most of the Allied Societies and a great many of their Past Presidents. We have also with us twelve members of the Council of the Royal Institute and a great many of the other members. We have also with us, I am glad to say, representatives of our Dominions Overseas. We have Mr. and Mrs. R. Alsop, of Australia; Mr. Kerr, from Australia; and Mr. McWilliams, from South Africa. We are also very pleased to see with us this morning Mr. Harvey Corbett, from New York. It is always very encouraging to see these members from different parts of the country, apart from those visitors of ours from Overseas whom we welcome so cordially, because one of the most important elements of this Conference is that it gives architects a valuable opportunity of meeting their brother architects and of discussing with them the various problems which confront us all at the present time.

We meet together, we lunch together, we dine together, under the most favourable auspices; we can visit places of historic interest and beauty, and for two or three days at least we can leave all the turmoils of office and business matters behind us. A most excellent programme has been arranged, and I am sure that we shall have a very pleasant time. But before we get to that part of the programme we always endeavour at the Conference to get an address on some subject of interest to architects by an authority on the subject, and we are fortunate in that we are going to have an address on "Architects and the Public," from Sir Theodore Morison. Sir Theodore needs no introduction to you from me—he is the Principal of Armstrong College, the Vice-Chancellor of the University of Durham, and he is a great educationalist. He served on a great many battle fronts during the War, and he is well known to all of you in this part of the country and throughout Great Britain.

He is going to give us to-day a paper from the layman's point of view on "Architects and the Public," and I am sure that we shall have great pleasure in listening to what he has to say to us on that subject. It is extremely kind of Sir Theodore to come here to-day, because we all sympathise with him in the serious illness of his wife.

Sir THEODORE MORISON: Let me first of all thank you for the very kind and sympathetic reference which has been made to the anxiety I have recently been going through, and I may tell you now that the most acute part of that anxiety has now been removed. My wife is distinctly better, and though her convalescence will be long, she is now on the high road to health. I can assure you that it gives me the greatest possible pleasure to take part in the reception of the Royal Institute of British Architects to Newcastle, and on behalf of the University—and I must speak for the University—and of the whole city and town I bid you the most hearty of welcomes.

Sir Theodore Morison then delivered his address. At its conclusion the President asked Mr. Harvey Corbett to propose the vote of thanks.

Mr. HARVEY CORBETT: I regard it as a very great privilege to be permitted to propose a vote of thanks to Sir Theodore Morison for the illuminating and inspiring address which he has given us. I am glad that he has not visited New York. I came to London and to Newcastle with a great feeling of relief because of the uniform height of your buildings. London for example, which I happen to know better than Newcastle, is like a beautiful rug, in which there is a variety of colours, but which all seem to blend in a harmonious whole. If you go to New York you will see buildings of from four to forty storeys standing alongside one another. If Sir Theodore saw these buildings I think he would feel that we needed his advice over on the other side more than you do here. In proposing this vote of thanks I have only one regret, and that is that we cannot have Sir Theodore in New York to tell us in the way he has told you the things that we, of all people, ought to hear. I have the greatest possible pleasure in proposing a hearty vote of thanks to Sir Theodore for his splendid and helpful address.

Mr. ARTHUR KEEN (Vice-President), in associating himself with Mr. Harvey Corbett in the vote of thanks, said: We all have the feeling that if the general public were all like-minded with Sir Theodore our task as architects would be made very easy. The question of the control and freedom of any of our acts seems to me to be extraordinarily interesting. We all recognise that, whilst freedom must be exercised with moderation

in these days, the control to which we have to submit is rather more than we care for. It is not always exercised with judgment, and therefore it is not an unmixed blessing. We have had examples in London—in Kingsway and Aldgate and Regent Street—where architects have had to submit to a very considerable amount of control, and one cannot conscientiously say that the result has been all that one might have wished. It may be that when the proper control in regard to buildings comes to be exercised in a proper manner, it will result in the general advantage of the public. It has been a very great pleasure to me to come to Newcastle, and I am looking forward to what I shall see this afternoon and the next day or two, and I must thank you for the kindness of the reception which you have accorded to your visitors. For the present, may I say that it is with the greatest possible pleasure that I second the vote of thanks which has been proposed by our distinguished visitor from the United States?

Mr. WILLIAM WOODWARD: Sir Theodore Morison has given us very considerable food for thought, and one of his observations was that advertising is a necessity. I came here early yesterday, and I had an opportunity of wandering round this city of yours, and I was peculiarly struck by the advertisements on the business premises of your city. I am accustomed to London, and I have in my mind one or two streets in London which show signs of vulgar advertisement, but I must say that I think that this city of Newcastle is no better. Not only are the advertisements horizontal and vertical, but they are diagonal as well. I admit that advertising is necessary, but I agree with the lecturer when he says that it is within the province of architects so to design their buildings having regard to the fact that their clients must have advertisements, and I am sure that they can so design their buildings that there shall be none of the vulgarity to which I refer. Reference has also been made by Sir Theodore to the want of uniformity in the architecture of our streets. I have in my mind a thoroughfare called the Strand, and I have in mind another thoroughfare which some of you may know, Regent Street, and in this connection Sir Theodore has very properly referred to Messrs. Lyons' establishment, where they have effected a really most excellent system of electric lighting for their place in the night time. With regard to uniformity, Baron Haussmann in the Napoleonic days in Paris secured uniformity, and that was because the French designers as a whole had a particular taste for colour. The Strand is by no means an example of architectural uniformity, but it is a pleasure to look at, and I must confess that I prefer the divergence in style in the Strand to that of some of the thoroughfares where a decided uniformity on lines of horizontal cornices obtains. Take the case of Regent Street; you know that Nash designed the Quadrant in Regent Street and secured uniformity, and in my opinion Nash's portion of Regent Street is far superior to the present Quadrant. To my mind your city is cleaner than some parts of London; I can walk across your roads almost four or five yards without fear of being run over; your policemen adopt the style of the sergents-de-ville of France, and instead of putting out a forbidding hand with stern demeanour, they put out a white-gloved hand, and gently wave you on in the way in which you would go. In conclusion may I say what a great pleasure it has been to me to visit your really fine city. I have much pleasure in supporting the vote of thanks.

PROFESSOR S. D. ADSHEAD: I feel that I must rise to say a few words with regard to a subject which has been touched upon by Sir Theodore, and that is Town Planning. Curiously enough I have attended two addresses by eminent speakers this week and both of them seemed to resolve themselves into considering the question of the decoration of a city. It just shows how very important the question of architecture is becoming, and I think it will ultimately lead to a solution of some of the greatest difficulties in the sphere of the architect. There is the general question of traffic control, a question which we shall not solve to-day, though we shall in a few years. We have great examples of traffic control. Kingsway, to my mind, is well controlled, and in all cases control by the local authority, elected by the people, should be responsible. We have yet to work out our own salvation, not by wrestling with impossibilities but with a new sort of control which will support the local authorities in their efforts to regulate matters in regard to town planning. Let me point out that we have real power to-day; it is perhaps not generally known that under the Towns Planning Act we have absolute control over the height of the building and, most important of all, the character of the building, and there is no definition as to what character is. They can have control over the elevation, and if necessary under the Act this matter of elevation can be submitted to the local authority. It can also be referred to the President of the Royal Institute of British Architects if necessary. I think the Royal Institute has been a little remiss in not seeing that certain clauses were incorporated in the Act. The question of control and character should be developed and their great care should be that it was exercised with the responsibility which it involved.

A MEMBER: Will you forgive me if I, as a very ordinary member of the public and as a member of one of the societies represented here, trespass on your time for a few moments? Sir Theodore Morison made what you will very probably find is a very valuable suggestion with regard to the lettering upon buildings, and he referred especially to the lettering on the Taj in India. With the greatest possible diffidence I would enter a caveat here and issue a word of warning in this way; all the lettering on Mahommedan buildings like the Taj, or nearly all of it, is taken from the Koran or something of that sort, and is put there, we might say, to the glory of God. When you consider the lettering put on buildings to the glory of Mammon, the control of this may be accompanied by difficulties greater than at first appears. Sir Theodore referred to the illumination of the houses in India at night, and I am speaking now more particularly of Calcutta, where the houses are merely boxes of square design, and the effectiveness of the illumination is brought out by the square building. The outlines formed by these lights are extremely beautiful, and in that case the illumination hides the architectural defects. May I be allowed to associate myself with the vote of thanks, which has been so ably proposed, seconded and supported, to Sir Theodore Morison?

Major HARRY BARNES : There is always before us the controversy between uniformity and variety, between the imposition upon us by some superior person or body of their artistic conception of the treatment of large areas of land and buildings, and the treatment of the separate parts by individuals who design and build according to their particular taste. I suppose in this country we have always had difficulties in imposing upon the citizens any sort of a cut-and-dried general plan. Sir Christopher Wren felt this and the failure in Kingsway and Regent Street in London may be laid down to the same cause. As long as we go on selling parcels of land to separate individuals, and lay on them the burden of building, they want to have their say in the kind of building and to design it so as to fit in with their own particular wishes and their own particular fads. It is an extraordinarily difficult thing to control plans. As long as you have architects at all I do not know that you will not have this individualism in building. After all, if an architect gets a commission he looks upon it as a chance to express himself and carry out in it the ideas that are in his mind, and I think there will be a very considerable resistance on the part of architects to being controlled in their designs to any great extent by a general plan. In London you come across places where streets or squares seem to be designed from end to end by one man, and if it is well done one says let us have more of this. Then you go to some other place and come across a meandering mediæval street, and at every turn you get a view which you never expected to see and you say " How beautiful ! " " Cannot we have more of this ? " I am therefore not hopeful that we are going to see any great advance in the direction of uniformity. I was wondering whether it was necessary, because in old towns and villages which have not been spoiled by industrialism you will find there are buildings in which the mediæval architects have let themselves go according to their particular fancy, and the whole effect is perfectly delightful and charming. It is chaos if you like, but you would not alter a single stone. With regard to the question of advertising on buildings the difficulty there is not only as regards new buildings but as regards old buildings, buildings which have been designed without any thought of advertisement. If one is dealing with a new building you can see that you get a good building with a natural advertising space on it, and it would not be a bad idea if the Institute were to institute a competition on those lines. It would probably lead to the obliteration of windows as architectural features, and one can see that some very artistic results might possibly come out of it. The trouble is not with new buildings but with old buildings changing hands, some going into the possession of multiple firms and people who want to advertise and are going to get their advertisements up regardless of any architectural features at all. They do not care how it is done as long as they get their ideas before the public. In order to get protection from that we shall have to get protection from the authorities, and perhaps some action of a joint nature might be brought to bear to-day in order to prevent buildings being spoiled in this way. If we are to have any efficient control over it, it will require fresh legislation, and now that Parliament is turning its attention to the control of advertisement it would be a good time to bring their attention to the control of advertisements on buildings. All art must be for all time dependent to a large extent upon the taste of the community. I join most heartily in the vote of thanks to Sir Theodore for having brought to our notice such very important and interesting questions.

Mr. T. R. MILBURN : Sir Theodore has referred to some matters which have been exercising our minds for a long time. With regard to the question of advertising, I quite approve of what he says, and I think it is a good suggestion that our new buildings should be so designed in order to provide space for advertisements without disfiguring their architectural features, and a great deal can be done in the way of uniformity.

Mr. HARVEY CORBETT : May I, Mr. President, say one more word on the question of advertising ? I may give you one or two experiences or facts in connection with that phase in New York. We have found that on Fifth Avenue the local Association of Merchants and Property Owners have agreed among themselves not to deface their buildings by electric signs. It seems to me that is a method by which you could solve a problem which Sir Theodore Morison has outlined. On Broadway, however, the merchants have all agreed that they will go to the limit of electrical illumination, and in this connection I will call particular attention to a Londoner who had been shown one of these tremendous electrical signs on Broadway covering the whole of the building, and, of course, involving a large expenditure of money every minute of its operation. The American was bragging about his signs—we all do that—and pointing out what a wonderful thing it was, how much it cost, how many lights it contained, and finally, when he paused for breath, the Englishman said : " I see, but is it not horribly conspicuous." A good many of our successful buildings have been made possible because the architect has persuaded the owner that good architects pay. They are dealt with on a commercial basis, this being a commercial age, and they approach him on the basis that everything good to look at is the best advertisement in the world, and I believe that if the architects will take that point of view a great deal can be done towards improving the standard of our street architecture.

Mr. W. J. McWILLIAMS : I speak with all humility, coming as I do from a very distant part of the British Empire, South Africa, and a person coming from a land like South Africa to a country like this is struck at once by the dreadful monotony of the largest cities of your land, because of the smuts and the smoke and the terrible blackness. I am told that the Midland people are proud of the blackness of their city ; all I can say is that if they are proud of that, I do not see any hope of remedying the things which Sir Theodore complained about, and that is the struggle for uniformity. I consider in Newcastle between here and my hotel there is enough goldbeaters' skin to cover the whole of this building. That is an evidence of the enterprising business man who is trying to make out that his business is not part of the street, but the whole street itself. If something could be done to persuade the authorities to electrify the railways and to lay out the cities with the smoky parts at some distance, and to introduce central heating into the larger houses—at present all your houses are simply chimneys—there might be a possibility of cleaner towns and better health conditions. Take the Strand,

for instance. You have in one place a red brick building, next door to it a terra-cotta building, and then beyond that a white terra-cotta building, and still something else of a different colour. There is possibly a building erected in stone, and in a few years' time the terra-cotta building will retain some of its colour, but a stone building will be jet black. Could not something be done to keep your towns and cities a little cleaner? It can only be done, I know, by slow growth; but anyone coming from a land of sunshine in the British Empire, or from any other country where industrialism is not so rife, will see a vast contrast. I have toured a good deal around England, and there is one thing which has appalled me in going through the lovely villages of Kent and Surrey and in the North, and that is the character of their shops and their shop windows. I noticed that in some of the villages there seemed to be a fashion created of painting the spaces between the half-timbering with a ghastly sky blue in some instances, and in other instances a horrible sort of magenta pink, and if that sort of thing is going to spread I do not know what is going to become of the charm of the English villages. I suggest that something should be done by your Institute to try and stop this sort of thing, because once it begins it may run riot. I am told that it is impossible to interfere with private interests in England, and I know that vested interests are always a stop-gap to progress. I thank you for giving me this opportunity of addressing you this morning, and with all sincerity I endorse the vote of thanks to Sir Theodore Morison.

The PRESIDENT: Before I put the vote of thanks to the Conference I should like to say how very much I have personally enjoyed Sir Theodore's address. It has covered much ground, and you have heard by the discussion which has followed how many topics of importance and interest it touched upon, and it may be that at some other time, with fuller opportunities, there may be further discussions of an interesting and instructive nature on the points which Sir Theodore has raised and which may eventuate in the ultimate advantage and benefit of the Institute itself and of the profession. With reference to what has been said by Professor Adshead, I always understood that the Town Planning Act was not obligatory, and that it was left to localities whether they adopted it or not, and that is one of the main reasons why all over England to-day we see houses which are not uniform in construction or appearance, but which are left to the individual tastes of the owners. If you go through the country you will find numerous cases where the owners are allowed to put up anything they like. Our friend from South Africa has referred to our country villages and towns and to what he very rightly considered spoiled them from the point of view of beauty and interest. Going through the country, as I often do, one of the saddest sights I see is the vision of a village shop window dressed in a more or less modern style, displaying a bewildering array of miscellaneous articles instead of showing, as they used to do, just a few things. In the olden days one was attracted by the village shop and its modest display. I am perfectly certain that the village shop does not get any more custom by its elaborate display than it did when the display was more modest; in fact I am sure that the old system was far the better. With regard to advertisements in our cities I think that is a matter in which the Institute might endeavour to do something for us. It is really deplorable that a nicely designed building should be used simply as a background for advertisement. Take the Strand in London for instance. There are good buildings there such as the Tivoli Cinema, which is quite a dignified stone building; but the proprietors have placed a huge metal construction upon it without any regard to the beauty of the building, which is being absolutely spoilt. Some control over this sort of thing would be greatly to the advantage of us all. There is really no need for this class of advertisement, and if we all agreed not to have them just as much business would be done. In the old-fashioned shops if you saw one article displayed upon a piece of white paper, a piece of china for instance, you would cross the road to look at it, and possibly to purchase it, but if you saw that old-fashioned window crowded with a miscellany of articles you would not trouble even to look at it. With regard to the question of the lights at night could anything possibly be worse than Piccadilly by night? It is the most hideous and vulgar place it is possible to imagine. I have the greatest pleasure in putting to this Conference the vote of thanks which has been so ably proposed, seconded and supported, to Sir Theodore Morison for his very valuable paper.

The vote of thanks was carried with acclamation.

SIR THEODORE MORISON in reply said: Please accept my most grateful thanks for the vote which you have accorded me, and may I say how very much interested and instructed I have been by the discussion which it has elicited. The contribution which I should have made to the discussion was so admirably put by Mr. Harvey Corbett that I do not think I need say anything at all after what he has said. I am glad to hear him make that extremely important point that the success which has been attained in Fifth Avenue, New York, is due to the co-operation of the different shop owners there. It is to the common action on the part of owners of property in our shopping quarters that I look to rather more than to municipal or national control. What I should like to stress and submit again to your consideration is, that you should directly approach the owners of shop property and induce them to take the enlightened action which has been taken in Fifth Avenue. What would help much more than any parliamentary or municipal control is the creation of the taste for architectural tradition which did exist in certain years, and to which we attribute all the most interesting features of architecture. I could wish that Mr. Harvey Corbett had told us a little more, because we are all conscious of the great contribution to architecture which American architects are making at the present moment, and I should have been glad to have him criticise quite frankly what he has seen in this country and so enable us to profit by the magnificence of the experiments which are being made in America. We all of us feel that a great opportunity has been given to the architects in America by the princely munificence with which various private citizens of America have dispensed their wealth. They are endowing universities, public buildings and libraries so that American architects have the opportunity of making experiments in their country which we here in England sigh for in vain, but we must recognise that American architects are making a really magnificent use of that opportunity, and we should be grateful indeed if we could hear from Mr. Harvey Corbett what they are doing.

For the further proceedings of the Conference see pp. 557-564.

Recent Developments in Apartment Housing in America—Part II

BY WILLIAM T. BENSLYN, A.R.I.B.A., A.R.C.A. (GODWIN BURSAR, 1923)

Apartment Hotels.

Apartment hotels, as the name indicates, are buildings in which the functions of hotels are combined with those of apartments, the principal feature being that although the management takes over many of the worries and responsibilities of service, the apartments, although small, are capable of being made into a comfortable home in which the occupants can live their own lives in privacy. Most designs have a standardised unit as their basis, these do not vary much in type and mostly occupy an area of approximately 500 square feet. As an illustration of the possibilities of variety in the arrangement of these units, I give a typical example which has been worked out for use in the design of such buildings by Messrs. Holabird & Roche, of Chicago. All such plans (Fig. 19) are combinations of the same elements; each unit consisting of a large bed-living-room with a disappearing or portal bed or beds which fold up and swing round into a ventilated cupboard during the daytime. This room is thus made to serve as a bedroom at night and a living-room during the day. On one side a space 7 feet wide is given up to breakfast-room and kitchenette, and on the other a space 5 feet 6 inches wide is utilised for bathroom, dressing-room and wardrobe. The kitchenette is connected with the public corridor by a service closet used for deliveries, &c. Such a unit provides one or two persons with all the requisites for living with the minimum of housework. The idea is of Western origin, originating in California. Americans are very fond of travelling at all times and do not mind making journeys between places as far apart as New York and San Francisco just for a short holiday. They do not, however, endeavour to move large quantities of furniture from place to place. Apartments of this type are, therefore, let furnished. Not only is the actual furniture supplied by the management, but also all the crockery, pots, pans, brooms, and the whole of the miscellaneous cooking equipment required in housekeeping, which are on charge to the occupant. The kitchens themselves are marvels of compactness and seem to have absorbed every ingenious contrivance for space and labour saving. The kitchen and breakfast-room are really one room, but the cooking part is concentrated at the end nearest the service-closet and the breakfast-room nearest the window. These are to some extent separated by two china cupboards 4 feet high and opening on both sides. The actual kitchen occupies an area of approximately 45 square feet, and in this it is quite possible to cook an ordinary meal properly. On one side there is the range and kitchen-cabinet containing groceries, &c., on the other side the sink and draining-board. At the end, adjoining the service-closet, the refrigerator acts as a larder and also as a modified tradesmen's entrance. At the side of this there is a convenient cupboard for brooms. The success of apartments with kitchenettes depends largely on the efficiency of the ventilation. In some examples the bed, when not in use, stands vertically in the dressing-room.

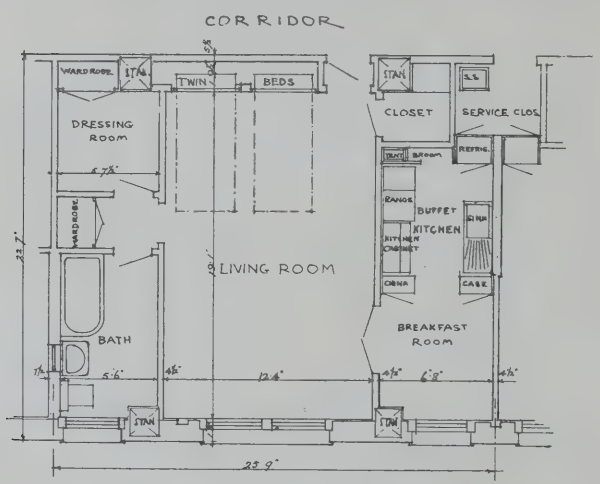


FIG. 19.—TYPICAL UNIT FOR APARTMENT HOTEL
Architects—Messrs. Holabird & Roche, Chicago

Buildings of this type are very common in Chicago; many were erected during the latter part of the War to accommodate those working on the executive side of munitions, etc., a good example being the " Surf " designed by Mr. Armstrong. The typical floor plan included shows a number of standardised units arranged on both sides of the H-shaped corridor. The whole of the apartments are well lighted, and those situated at the external angles have sun-parlours in addition to their other accommodation. Although a restaurant is provided in this building, it is quite small, the occupants preparing most of their own meals; neither is the space given up to lounges so great as in hotels which are not fitted with kitchenettes.

The Hotel Windermere East is one of Chicago's latest apartment hotels. It occupies a complete block overlooking Jackson Park and Lake Michigan. The plan is especially noteworthy in its avoidance of all internal courts and the excellent outlook given to all rooms (Figs. 20 and 21).

Ground or First Floor.—The planning of the entrance vestibule is an excellent solution of the problem of dividing those entering and leaving the hotel on foot from those doing so in cars. There is a shallow drive for motor traffic leading to the front entrance of the vestibule, which is protected by a projecting awning, whilst on either side there are footpaths leading to side entrances. This vestibule is placed well out into the court, and is linked to the main lobby of the hotel by an entrance foyer. It is treated as a small independent building, giving considerable scale to the main building by contrast. The elevator lobby, which is the communication centre of the plan, is directly

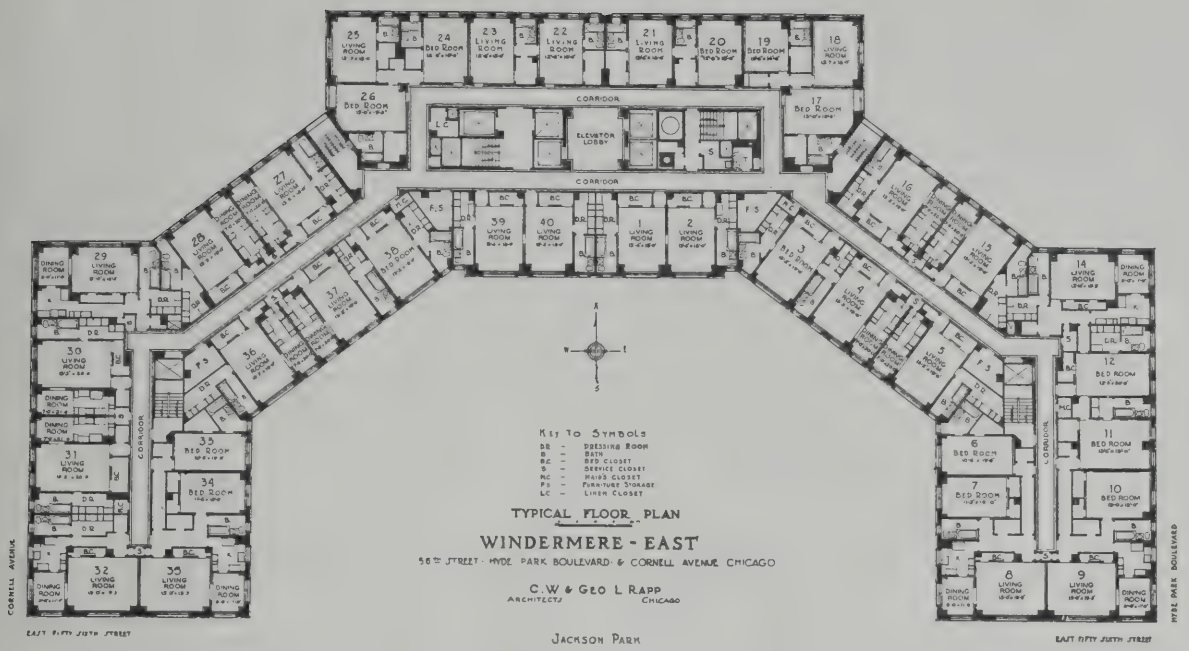


FIG. 20

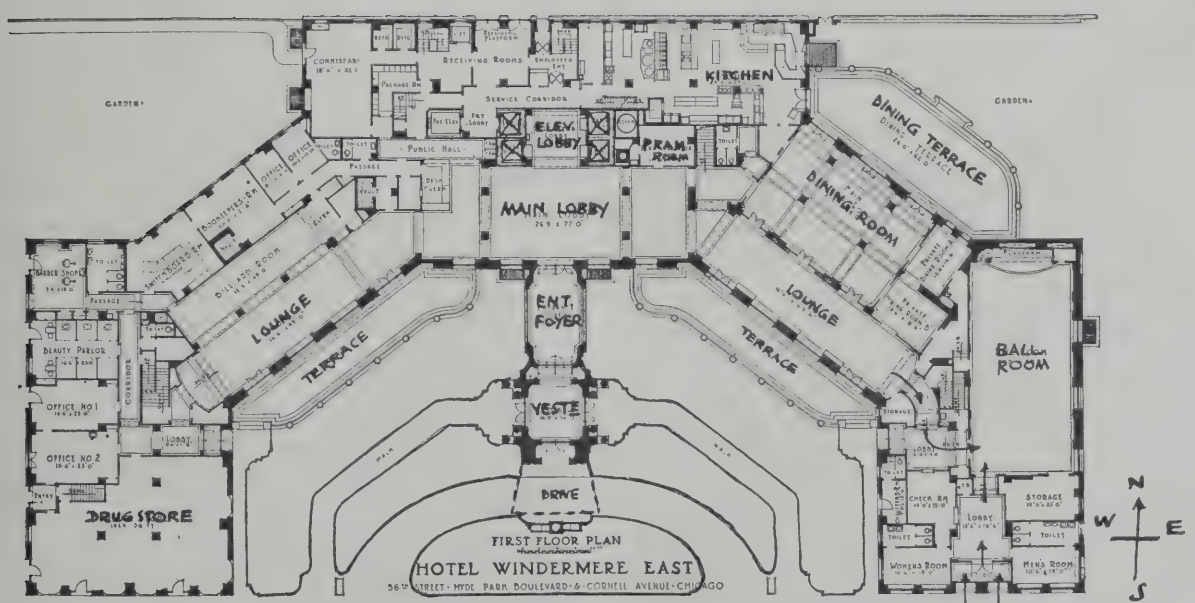


FIG. 21.—C. W. and Geo. L. Rapp, Architects, Chicago

opposite the entrance on the other side of the main lobby. In addition to the lounges, dining-room, etc., located on this floor, there is a ballroom in the east wing with a direct entrance from the street as well as a lobby connecting with the east lounge. Complete cloakroom accommodation is planned in conjunction with the street entrance to ballroom for the use of non-residents. In the west wing, there are drug store, barber's shop, beauty parlour, etc., in which the American women pass the time which their English cousins, owing to the lack of labour-saving devices, have to give to housework. For the convenience of residents with children, a perambulator room has been provided near the elevator lobby. The placing of the kitchen next to the dining-room is typical of the most modern American arrangements. In addition to being convenient for service to the main dining-room, direct service is provided to the dining-terrace. The illustration of the typical floor plan shows the clever handling of the junctions of the inclined wings with the centre block and the side wings. Suites are arranged on either side of a central corridor except in the case of the centre block, where the elevator lobby, elevators, service stairs, etc., occupy the central internal position with a communicating corridor surrounding them, which is itself surrounded by suites. This arrangement enables the maximum advantage to be taken of outside walls for direct light to the suites, artificial light only being used for the corridors, elevators, lobby, etc. The problems of noise, vibration and smells have all been efficiently dealt with, the service departments all being planned with either a corridor or store-room between them and the public rooms, acting as a buffer state, in addition, sound-proof doors are provided. To eliminate the transmission of the vibration set up by machinery on the upper floors, the machines are placed on concrete platforms 3 feet above the top floor, supported by pillars of masonry insulated with sheets of cork and lead to absorb the vibration. The presence of the kitchenettes on the internal corridors might appear likely to cause trouble from smells. The ventilation, however, is so efficient that this has not been the case. By maintaining pressure in the corridors, the air goes into the apartments by transoms or other inlets, and is mechanically exhausted through the bathrooms, bed-closets, and kitchenettes. The main exhausts extract 20,000 cubic feet per minute. By this system it is practically impossible for any air and accompanying smell to come from the apartments into the corridor. It will be noted that there is a considerable variety in the suites provided, and pass-doors are left in some places to enable adjustments in the size of suites to be made.

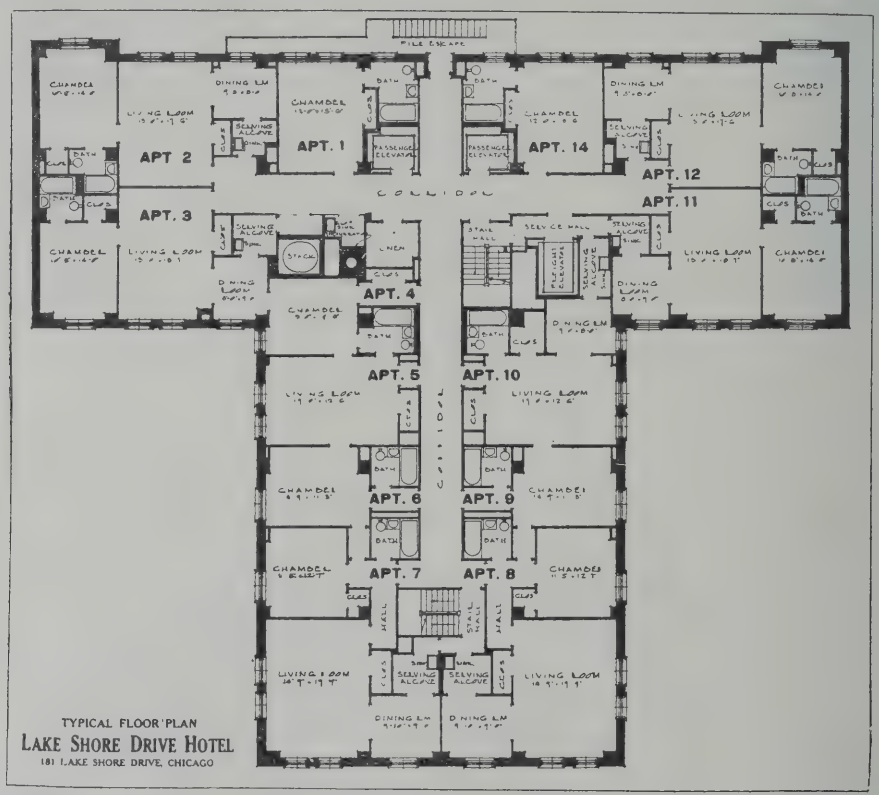


FIG. 22.—Messrs. Fugard & Knapp, Architects, Chicago

This building was erected by Messrs. C. W. and George L. Rapp, architects, Chicago, in 10½ months at a cost of 52 cents per foot cube.

The Lake Shore Hotel, Chicago (Fig. 22), is an example of smaller apartment hotel design by Messrs. Fugard & Knapp, of Chicago. The typical floor plan shows an arrangement of apartments without kitchenettes, as in this case the management supply all meals and service. A further modification is made by planning the whole of the bathrooms internally. There are a number of communicating doors between the apartments, enabling the suites to be varied at will. There are no folding beds, the larger apartments consisting of a large living-room, bedroom, with bathroom opening from it, and a small dining-room connected to the corridor by a serving alcove fitted with sink. The smaller apartments are really the ordinary bedrooms with bath usual in American hotels.

The site has a frontage of 117 feet to Lake Shore Drive and a depth of over 100 feet. The side boundaries not being available for lighting purposes, only the ground floor covers the whole area of the site. The upper floors are planned as a T-shape, leaving ample areas on either side of a central block carried up over the entrance.

Ground Floor Plan.—The entrance is through an ample vestibule to a long lobby, at the further end of which the lifts are placed ; on one side there are steps leading to the lounge, and on the other to the dining-room. On the left-hand side a recess is planned for the room-clerk and cashier, leaving the lobby unimpeded by those transacting business with them. The dining-room and lounge are 3 feet 5 inches above the level of the lobby, which makes it possible to provide direct light to the basement and at the same time keep its floor high enough to avoid flooding. Quite apart from this practical point, the outlook from the dining-room and lounge is pleasanter, and there is no annoyance from overlooking by passers-by. The kitchen is on the same level as the dining-room, and there is a staircase leading from it to a small mezzanine where the cook's locker-room is located. The goods reception room, external areas, fire escapes, etc., are all arranged at the back of the site facing the service road. The basement is devoted to laundry, heating plant, fan and other machinery rooms, staff-rooms, coal and other storage. The drainage is all internal, all pipes being taken to a central manhole which is emptied by an ejector.

Buildings of this type are essentially commercial propositions. Simplicity in design is attained by eliminating all features which do not arise directly from the requirements. A further investigation of the typical floor plan shows how essential good planning is to effect economy. The corridors, although wide, could not well be less in length, the elevators are placed at the junction of the arms and are therefore equally convenient for all rooms. By placing them one on either side of the centre line it is possible to run the central corridor through to an external fire escape at the rear, whilst at its other end an internal fire-stair is planned. The unlighted space in the internal angles of the plan is devoted to the chimney-stack, incinerator, freight elevator and another staircase conveniently situated for use as a substitute for the passenger elevators in case of breakdown, which seldom occurs. The steelwork is well placed in relation to the rooms ; stanchions run through all storeys from roof to basement, trickiness of all kinds being avoided. The authors of the design stated that after getting the general plan decided, steelwork dimensions are fixed and the steel contract let whilst the other working drawings are being prepared. The living rooms vary in size from 230 to 300 feet super., and the average bedroom is from 150 to 160 feet super. The typical floors have a height of 10 feet 4 inches from floor to floor. On the eighteenth floor there is a winter garden and promenade, the remainder of the floor being devoted to servants' rooms. The elevations are frank expressions of the plan and section. They are plain, but their size and mass, combined with the sense of pattern caused by the repetition of windows of the same size, give them a character of their own. Large projections have been avoided, where detail has been used it is of the stock variety and is in scale with the section of the elevation to which it has been applied instead of to the composition as a whole. One cannot help feeling that, although it is essential not to reduce the letting value of any particular floor by altering the rectangular character of the openings, something is lost in interest which is gained in economy and efficiency.

An interesting modification of the typical Apartment Hotel is the residential apartment hotel for one sex only. The first buildings of this type were erected by the Allerton Houses, Ltd., in New York, where several have been open for some years. Others are now being erected in Chicago, Cleveland, and other large cities.

The idea was to provide high-class apartment accommodation at reasonable rates for men and women in separate establishments. The cost of rooms varies from ten to twenty dollars per week, exclusive of food. All the houses have their own restaurant and cafetaria, or a restaurant which is run on self-service lines for breakfast and lunch, but which provides table service for dinner. They appeal to many who want to live neither in a boarding-house nor a hotel. The cost of living in a good New York hotel is usually as much as ten dollars per day and the quality of the food and service not appreciably better than in these houses. One of the explanations of the smaller charges is that each house is run for one sex only, which cuts down the service very considerably. In many New York hotels the service is in the ratio of one servant to one guest.

A typical arrangement for buildings of this type is to devote the ground floor to entrance hall, lift hall, administration offices, lounge, library and other public rooms ; waiting-room accommodation is provided for members of the opposite sex calling on the residents. Above this floor there are anything from ten to twenty storeys devoted to bed-sitting-rooms. At the roof level there are often rooms for public use. As illustrations of buildings of this type I include " The Shelton " by Mr. Arthur Loomis Harmon, and the Thirty-eighth Street " National Fraternity Club Building," an Allerton house by Messrs. Murgatroyd & Ogden.

" The Shelton."

The success of the Allerton houses encouraged a group of New York investors to commission Mr. Arthur Loomis Harmon, the architect of the earlier Allerton houses, to design the largest apartment house for men only yet erected in New York. The plans, sections and details of

this building also serve to illustrate the general principles of the arrangement and construction of other buildings of this type.

Site.—The site selected has many advantages. It is on the east side of Lexington Avenue, between East Forty-eighth and East Forty-ninth Street, within easy distance of the best residential district, clubs, theatres, &c. It is also quite near the Grand Central, Elevated and Subway Stations, from which Wall Street and other business centres can easily be reached. It has the advantages of an island site, as the whole block is controlled by the promoters of the scheme.

The Problem.—The problem of designing such a building is complicated by the variety of its functions. In this case the architect had not only to provide living accommodation for 1,200 men, but also the social and recreational conveniences of a club catering for men of all tastes. A proportion of the cost of each public room has to be included in the rental of each bed-sitting-room.

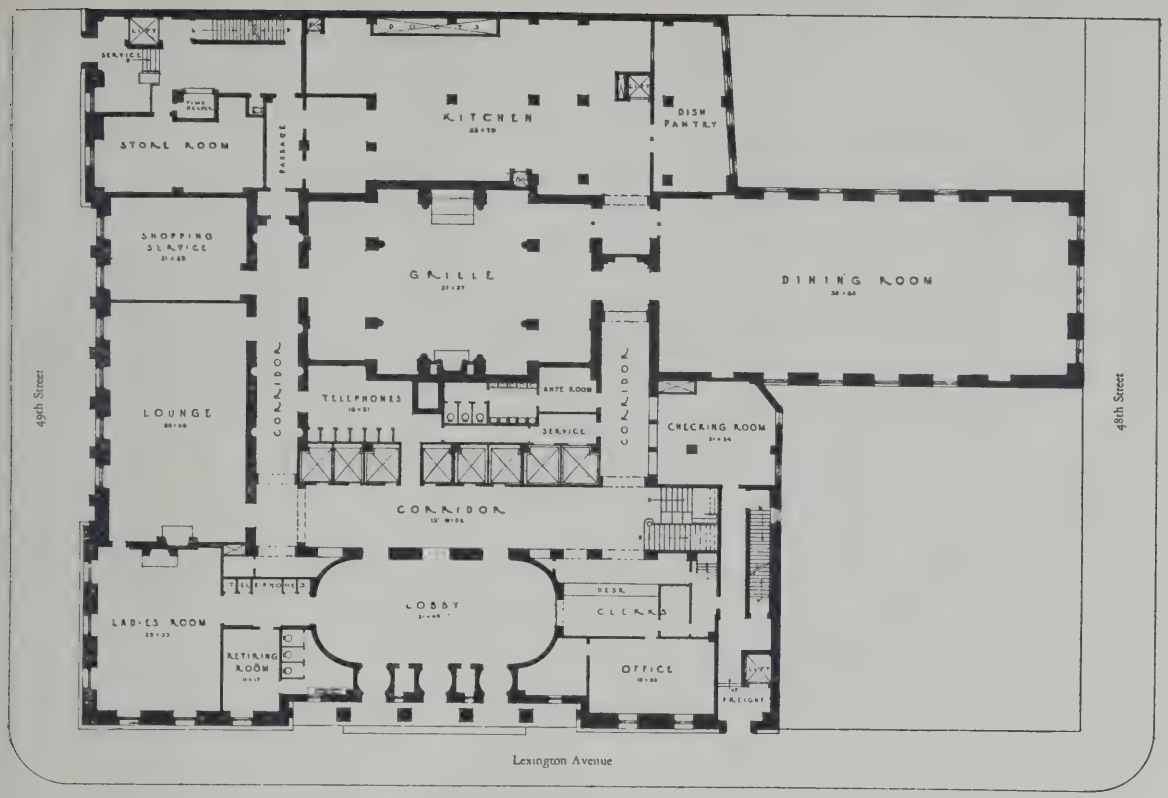
FIG. 23.—ANGLE OF "SHELTON" HOTEL, NEW YORK
Showing arrangement of furniture

Owing to the large scale of this undertaking it has been possible to provide very ample public rooms and at the same time keep the rates for the living accommodation considerably less than in first-class hotels. Economics have been kept in mind the whole time, great attention and ingenuity have been exercised in reducing the spaces given up to plumbing, ventilating ducts, &c., to minimum sizes, to avoid the loss of valuable rentable space. The unit has been very carefully considered and a certain amount of variety introduced in the accommodation. Most of the rooms have their own bathrooms fitted with either tub or shower, but there are some rooms with lavatories only, and for these bath and toilet accommodation is provided in convenient positions off the public corridors. The method of planning two bedrooms with a common bathroom between has not been used in this building but is still employed in some of the Allerton houses. In all the rooms ample wall-space is provided for the furniture; the detail plan of an angle of the right wing shows the arrangement of the furniture in various types of rooms. Each room has a chest of drawers, a large easy chair, a Windsor armchair, a desk chair, a bedside table, a hanging mirror, a floor reading-lamp and desk lamp (Fig. 23). The bed is designed without a footboard and is 3 feet 3 inches wide. In the daytime it is covered with a couch cover. Telephones are fitted in each room communicating with an exchange in the building and can be used both for internal and external calls.

Elevators.—The building is thirty-two storeys high, with setbacks at the fifteenth and twenty-second floor levels. The importance of the elevator accommodation in a building of this height is obvious, and the success of the plan depends largely on its position and arrangement. Three passenger and one service elevator run to the thirty-second floor. An additional service elevator runs to the twenty-second floor, and three additional passenger elevators to the fifteenth floor. These are all placed on one side of a main corridor connecting the two wings of the building, the plan of which in the upper storeys is a simple U-shape. This arrangement enables this corridor to be adjusted in length and width while still keeping its central position in the plan, notwithstanding the reduction of floor area which occurs as the set-backs are made.

The first or ground floor plan shows how the special needs of the building are met (Fig. 24). The entrance lobby is in the centre of the Lexington Avenue frontage, with ladies' room at one end and offices for administration purposes at the other. The elevator corridor is planned immediately behind it, providing circulation between the lounge, dining-room and grill without passing through the entrance lobby. The kitchen is planned at the back of the site on the same level as the dining-room and grill. The second floor is connected with the ground floor by a staircase at the end of the elevator corridor. A lounge, games room and reading room, form a suite overlooking Lexington Avenue, and the remainder of the floor is devoted to billiard room, library, writing room, card rooms and private dining rooms. In the basement there are barber's shop, bowling alley, Turkish bath, and the upper part of the swimming bath, which is in the sub-basement. The remainder of this floor and of the sub-basement are occupied by fan, boiler and other service rooms. The hotel character has been successfully avoided and the atmosphere of a home-like club created.

Above the second-floor, the angles are kept out to the frontage lines, but the central bays are recessed and the mass of the large central feature commences to be expressed. There are now twelve floors of bedrooms to the first set-back. A study of the third floor plan will show how this adjustment permits the elevator corridor to be reduced in width and a reasonable depth obtained for the typical bed and bathroom unit (Fig. 25). At the fifteenth floor the first main set-back occurs, allowing roof gardens to be placed over the south wing and projecting angles; from these there are very fine views, besides seclusion from dust and noise. Considering the building vertically, it is in a central position equally convenient for the upper and lower floors and therefore especially suitable for public use, a solarium 86 feet by 19 feet is provided on the south side with openings leading to the roof garden over the south wing. In the north wing there is a



First Floor Plan

FIG. 24

FIG. 25

THE "SHELTON," NEW YORK CITY. Arthur Loomis Harmon, Architect

FIG. 26

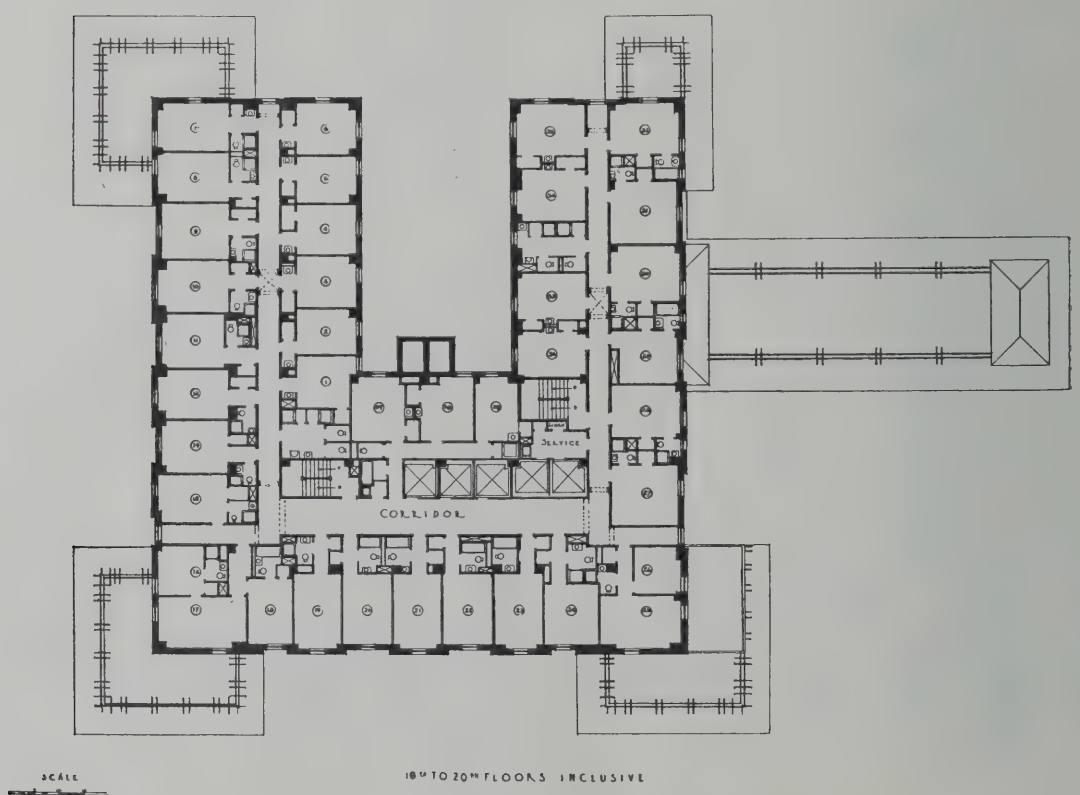


FIG. 27
THE "SHELTON," NEW YORK CITY: Arthur Loomis Harmon, Architect

dining-room 41 feet by 37 feet, with its own roof garden. In order to brace the building against wind pressure, a stiffener had to be inserted at this level. It has been utilised as a bridge connecting the north and south blocks. Overlooking Lexington Avenue two luxurious bachelor flats are planned each with its own sun-parlour and roof garden. These are the most expensive suites in the building. Small pantries are provided and food can be obtained from the main dining-room service. The foyer, pantry and cupboards between the living-rooms and the main corridor keep these suites especially quiet. A small point of planning noticeable on this and other floors is the provision of a small passage across the elevator battery giving access to the rooms at the rear of the elevators which would otherwise require a corridor on each side (Fig. 27). Between this floor and the second set-back at the twenty-first floor level there are five floors of bedrooms. The tower contains ten more floors devoted to bedrooms, and at the thirty-first floor a gymnasium and three squash courts. The pent house which sits on the flat roof of the tower contains the elevator machinery, the water-tanks, and ventilation apparatus. It is finished with a hipped roof covered with copper. The reduction in the width of the blocks on the upper floors owing to the set-backs necessitates a decrease in the depth of the bedrooms and the elimination of bathrooms planned between the bedrooms and the corridors. In some cases two bathrooms are planned in the space occupied by a bedroom on the lower floors. The bedrooms overlooking Lexington Avenue, from the twenty-first to thirtieth floors, have a space for hanging cupboard and wash-basin planned between the room and the corridor. In spite of the reduced areas, the U-shaped corridors are preserved.

Architectural Treatment.—The architectural treatment of a building like "The Shelton" gives opportunities for originality of grouping which seldom come to any architect (Figs. 28 and 29). The mass of the building has been largely determined by the requirements and limitations of the Zoning Law, and its distinctive character is due in great measure to their frank acceptance. Precedent plays little part in the design of such buildings owing to the essentially modern character of their development vertically. Vertical lines have been emphasised throughout, and there are no strong horizontal features above the base except the lines of the roofs which occur at the first set-back. The external faces are battered back giving a great sense of strength and solidity to the whole structure. This is managed quite simply by keeping the stanchions flush with the back of wall at the top and setting the wall-beams further out below. The curtain walls between stanchions are set alternately forward and back for a complete bay, instead of being broken round each stanchion. The vertical lines of the panels thus obtained give considerable scale to the elevation. The material used is a mellow, buff-grey coloured brick, wire cut on face and laid with a flush joint. The modelled ornament and dressings are in terra cotta of approximately the same tone. Variety of texture is given to the surface by slightly projecting brick patterns which are contrived not to show an obvious repeat. The two lower storeys, which are devoted to public use, are emphasised, as a base, by facing them with limestone, rough in texture and varying slightly in tint; an interesting detail has been introduced into this base where it can be easily seen. The main entrance from Lexington Avenue is marked by a fine colonnade of Romanesque character, with five arches resting on richly carved capitals. It runs through two storeys and is in scale with the building as a whole. Interest is given to the fenestration by the introduction of arched heads and projecting balconies to the upper central windows of the wings. Above the base, no attempt is made to introduce variety in the windows of the bed or living-rooms, all windows are of a standard size (5 feet 3 inches by 3 feet), metal, double-hung sashes, unbroken by glazing-bars. They are placed at regular intervals as dictated by the plan and section. Their regular repetition gives a chequer-like pattern to the elevation, their domestic scale and large number seem to express that although the building as a whole is enormous, it is made up of a great number of individual human dwellings. The building seen from a distance on a bright day appears to be built of yellow stone, the beauty of which is enhanced by the deep blue reflections of the sky in the upper windows. The greater height of the top storey in the tower is expressed by an arched treatment of the windows lighting the gymnasium. Angles of the tower are softened by the introduction of spiral columns finished with large projecting gargoyles representing griffins. The parapet of the first set-back is curved out at each angle and carried by a capital which crowns the spiral column at each corner.

In spite of the difference in character and scale, this building possesses a grandeur and simplicity such as we associate with the Palazzo Vecchio at Florence or the Keep at Ludlow.

The following consultants were associated with Mr. Harmon in the design of this building :—

Steel and concrete construction—Mr. W. G. Balcom.
Heating and ventilation—Messrs. Jaros and Baum.
Electrical work—Messrs. Richard D. Kimball.
Sanitation—Mr. William C. Tucker.

A few notes on their sections of the work and the method of carrying out the construction generally may be useful.

Water mains and pipe works generally are run immediately the steel frame is sufficiently advanced to take them. Electric conduits are run in ceilings before the concrete is laid. When the concrete floors are in, the metal door-frames are put in position, plumbing outlets for baths, lavatories, &c., and pipe work generally fixed on each floor; all measurements for setting out being taken from the steel. The partitions are then built, the advantage being that by this procedure, cutting for pipes, &c., is almost entirely avoided. Baths and sanitary fittings are placed in the correct position by a leading hand and the actual connections and fixings made by other men following up. All these fittings are covered with paper immediately after fixing to preserve them from damage during the carrying out of the finishing trades. Very careful provisions are made for co-operation between the contractors and the various specialists, who appear to work together with a minimum of friction.

The whole of the bedroom floors have been worked with a floor to floor measurement of 9 feet 9 inches, which gives an internal height of over 8 feet in practically all

cases. To enable this to be done, long spans have been avoided, the stanchions in the outer walls being spaced at centres which seldom exceed 12 feet. The internal lines of stanchions are spaced 13 feet to 16 feet 6 inches from outer walls, and the largest span between internal stanchions on bedroom floors is 21 feet 1 inch. This enables standard rolled sections 12 inches deep to be used as girders, two 12 inch channels with a plate between sufficing for the longest span. The tops of these are kept 3 inches below the finished floor level. The intermediate beams vary according to the span, but the majority are 6 inch or 7 inch H-sections with their tops kept 4½ inches below finished floor level. The floor slabs are 4 inches thick reinforced with a single layer of metal. The floors are calculated for a live load of 40 lbs. per foot super, and for a dead load of approximately 70 lbs. per foot super. Partition loads vary according to position. The stanchions are approximately 12 inches square and are encased with terra cotta blocks. The external walls are normally 12 inches thick, the outer 4 inches being of brick and the inner 8 inches of terra cotta blocks. The brick is bonded in every sixth course and the wall arranged as sketch. Internal partitions are in gypsum blocks, except where special fire-resisting qualities are required, as round fire towers, &c., where terra cotta blocks are used. The fire stairs are in steel, the treads and landings being concreted after fixing. The internal finishings in the bedrooms are plain but good. The door-frames are of iron with mouldings and rebate all in one piece. There are no fanlights, but louvred panels in the top of the doors, as shown in photo. The doors are of wood covered with zinc. Plastering is of two coat work left rough, the reveals to window openings all being plastered. For external angles a metal key is used fixed every 12 inches with clips, this avoids the expense of Keene's angles besides the saving in time.

Floors are finished in cement with carpet fillets laid in and close carpeted. Where, terazzo floors are used the pattern is lined out with brass strips which allow for expansion and contraction and avoid cracking. All bathrooms are finished with mosaic tiling in 1 inch squares The toilet fittings, such as soap-dishes, towel-rail, paper-holders, &c., are all in china and built into walls, reducing cleaning costs to a minimum. In the public rooms, the details generally are reminiscent of the early Italian renaissance, but in the second floor lounge, where wood panelling is introduced, the English tradition has been followed.

The electric installation being the same on a number of typical floors, the practice is to run risers vertically through these floors and to place a distribution panel on every fifth or sixth floor only. A similar arrangement is employed for telephone conduits. This method of wiring is very economical. A recent invention used in "The Shelton" is a metal skirting with electric conduits run in same which can be plugged at any point.

The heating and ventilation of this building has been most thoroughly worked out by Messrs. Jaros & Baum, who supplied the following notes on their scheme. The spaces allotted for heating and ventilation have been reduced to the minimum; for example, the extract grids in bathrooms are only 6 inches by 6 inches, each is connected to a separate metal duct which does not join the main duct until it has been carried up through a complete storey. The object of this is to avoid noises being communicated by the ducts; the size of the connections to the main ducts are adjusted at the various floors to equalise the pull of the exhaust. The practice of planning rooms without any natural ventilation necessitates the greatest possible efficiency in artificial ventilation, which, where properly installed, undoubtedly controls smells with greater certainty than is possible with natural methods. From a ventilation point of view inside bathrooms and toilets are to be preferred to those opening on to small areas filled with stagnant air.

NOTES ON HEATING AND VENTILATION OF THE "SHELTON" BY MESSRS. JAROS AND BAUM.

The heating system is a low-pressure steam-heating system of the two-pipe vacuum return-line type. All parts of the building are heated to 70° F. in zero weather, except the kitchens, which are heated to 50°.

The boiler plant consists of three Heine water-tube boilers, each rated at 220 boiler h.p., capable of being pushed to 150 per cent. of rating. The Warren-Webster Company specialities are used throughout for the vacuum return-line system, and Nash-Jenning motor-driven pumps create the vacuum and pump all the condensate back into the boilers.

In addition to the heating of the building, the boiler load consists of the heating of hot water for domestic purposes, and the heating of the fresh air supply of the ventilating system in winter time.

The building has a cubage of 4,500,000 cubic feet, and a heating installation of 45,000 square feet. The heating system was designed to take care of the updraft due to the chimney effect produced by a building of this extreme height. For this reason, the entrance heating was designed as a forced blast hot-air system with recirculated air, thereby offsetting the strong indraft at the doors caused by the direct communication between the lobby and the elevator shaft.

The design of the heating risers has also been studied with due regard for the height of the building. A main 12-inch steam line is run to the ceiling of the fourteenth floor, at which point a pipe gallery is created in a hanging ceiling space. In this pipe gallery the steam main distributes around the building with the risers taken off therefrom, feeding up and down. In this manner the total length of upfeed steam riser is reduced and a more rapid circulation obtained. The expansion of the risers is taken care of by means of corrugated copper bellows-type expansion joints located as shown on the riser sheets, with the rising lines properly anchored between joints. A study of the plans and riser sheets will make clear the method of handling the piping problem.

The ventilating problems in this building divide themselves into two groups. First, the general ventilation of the rooms below ground and the public rooms on the main floor, and, secondly, the ventilation of the interior toilet and bathrooms in the bedroom section of the building.

The lower story rooms are generally provided with supply and exhaust ventilation, this in turn being split up into various systems; the reason for this division is to economise in operation so that small fans and motors may be run to ventilate individual rooms or groups of rooms when other groups of rooms will be out of service. Thus the air supply is divided into three parts: (*a*) air supply for the basement rooms, (*b*) air supply

FIG. 29.—PHOTO OF THE CHICAGO ALLERTON IN COURSE OF CONSTRUCTION
Messrs. Murgatroyd and Ogden, Architects
Messrs. Fugard and Knapp, Associated Architects

FIG. 28.—SKETCH OF THE "SHELTON" FROM LEXINGTON AVENUE
By W. T. Benslyn
Arthur Loomis Harmon, Architect

to the swimming pool department, and (*c*) air supply to the general first-floor public rooms. The exhaust from these rooms is similarly divided with individual fans. The exhaust ventilation from the kitchen is on a separate unit all by itself, so that this can be run as continuously as is usually found necessary for the proper ventilation of kitchens. The toilet ventilation is also separately treated, there being three fans for this service, due to the fact that there is so much of it. Examination of the plans will show two fans on the fourteenth floor, which handle all the toilets up to and including the fourteenth floor, and a third toilet fan in the penthouse to handle the toilets from the sixteenth floor up.

A brief outline of the methods of determining the amount of ventilation in the various parts of the building may be pertinent at this time. The dining room and grille room on the first floor are each figured for ten air changes per hour of supply, and eight changes of exhaust, with the fresh air introduced about 7 feet above the floor line so as to get it into the breathing zone, and the exhaust pulled off at the ceiling, thereby removing the smoke, odours and objectionable heat from the highest part of the room to which it will naturally float. This has been found to be an ideal way of taking care of dining rooms. Other public rooms are also figured on this basis, with the distribution supply and exhaust arranged so as to keep the atmospheric conditions as comfortable as possible.

Interior toilet rooms are usually figured at 20 air changes per hour, with louvres provided in the doors to permit the ingressive air to accomplish the air change. The most difficult room in this building to treat properly is the kitchen. This is practically an interior room with a terrific amount of heat generation which must be dissipated in order to make the working conditions possible, and with the additional problem of preventing kitchen smells from working their way into the rest of the building, particularly the main dining rooms. To accomplish this result, we have provided 20 changes of air supply per hour over the entire volume of the kitchen, and 40 changes per hour of exhaust ventilation, thereby putting the kitchen under an intense suction. The major portion of the exhaust is drawn out of the hoods directly over the ranges, steamers, etc., where the heat is generated and the cooking odours produced; in other words, get rid of the trouble at its source. There is a supplementary exhaust provided at various points of the kitchen to remove the heat which gathers near the ceiling. The air supply is so distributed as to bring in a cooling breath of air partly to make up for the foul air drawn out, and to stimulate the operatives by feeling the fresh air current.

NATIONAL FRATERNITY CLUB BUILDING, 38TH STREET, NEW YORK CITY.

The "Greek Letter" and other fraternity clubs are a great feature of American university life, and whereas in the smaller cities they may possess their own building, in New York it is convenient to have a whole floor in a house of the Allerton type. To meet this demand, the Allerton Company commissioned Messrs. Murgatroyd and Ogden to design the National Fraternity Club building at the corner of 38th Street and Madison

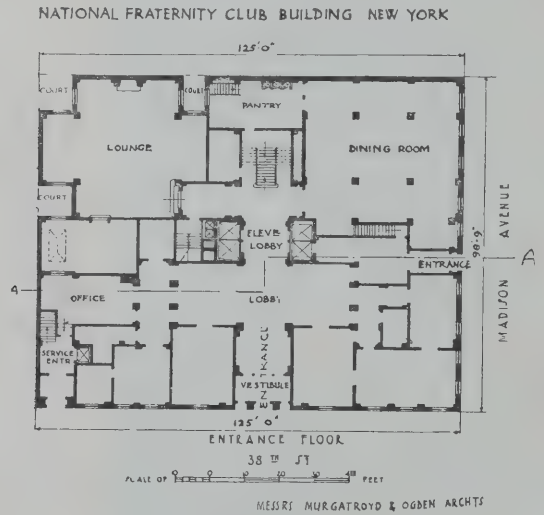


FIG. 30

Avenue. The perspective and section illustrate how the building is stepped back in the upper stories in order to comply with the requirements of the Zoning Law. At the street level there are entrances from 38th Street and Madison Avenue leading to a large lobby communicating with the lounge and dining-room and off which the elevator lobby is planned. A main staircase is provided to the second floor, which is also given up to public use. From the third floor upwards, the plan is H-shape until it reduces to a rectangular tower at the fourteenth floor. The design of this typical floor plan is the most important factor in the success of such an undertaking as this. The greatest number of rooms possible must be provided to enable them to be let at reasonable rentals, but convenience and amenities must not be sacrificed. The planning of the floors above and below these typical floors is largely determined by their requirements. A large proportion of the bedrooms are arranged with a common bathroom between, but the lavatory basins are placed in the bedrooms. The use of the shower bath instead of the tub is a noticeable feature of these bathrooms. Public baths and toilets are provided for the use of those occupying bedrooms not planned with this accommodation. The elevator lobby, in the centre of the building, is equally convenient for the east and west wings. Escape staircases are placed at the junctions of the cross corridor with the central corridor of the wings, making use of space which has no direct light. Other similar space is devoted to bathrooms, toilets, telephone, etc. Each floor has a large sitting-room to serve as a common-room.

Considerable success has been attained in the treatment of the elevations by the use of a rough red brick for the walls above the second storey, and by the introduction of detail reminiscent of the North Italian Romanesque style. The building relies for its main effect on the grouping arising from its plan and the set-backs required by the Zoning Law. The square angle blocks are grad-

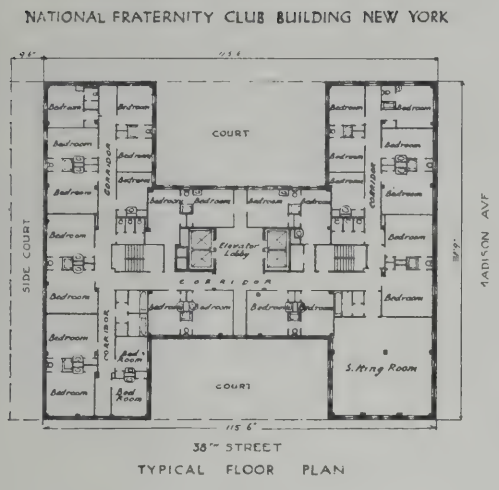


FIG. 31

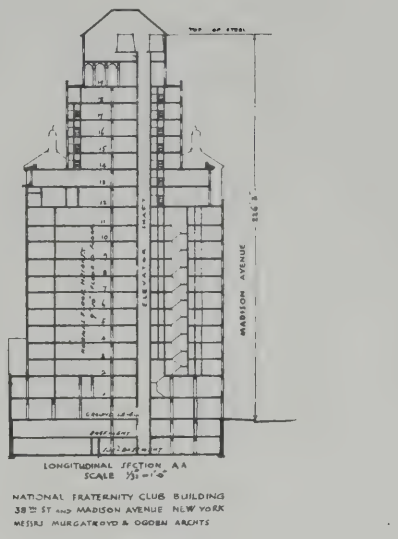


FIG. 32

ually brought to octagonal form, finishing in little cupolas. The central rectangular block is carried up as a tower, and after the usual set-back for the pent house, is finished with a hipped roof. A perspective of the Chicago Allerton house by the same firm exhibits similar principles of design. The base is treated in stone above which the bedroom floors are carried up as a shaft in plain brickwork, relying for its effect on the rhythm of the pattern given by the spacing of the windows. There are no large projecting cornices, but where public rooms occur the opportunity to emphasise them is taken usually by the introduction of colonnades. The relation of the brickwork skin to the supporting steelwork is shown by a photograph of the Chicago "Allerton" in course of construction.

I desire most sincerely to thank the many architects I met in America for their unfailing courtesy and help whilst I was pursuing my investigations, and also for the loan of valuable plans and drawings. I should like especially to mention the great assistance given to me by Mr. C. H. Whitaker, the Editor of The American Institute of Architects' Journal, *by advice and introductions.*

WILLIAM T. BENSLYN.

Where plans referred to in the text have been omitted they are examples which can be referred to in the American Architectural Journals in the Institute Library.

The Report on Waterloo Bridge

BY THE CONFERENCE OF SOCIETIES WHO URGE ITS PRESERVATION

On the 24th February, 1925, the special Bridges Committee, under the chairmanship of Mr. Norman, received deputations from the Royal Fine Art Commission and from a conference, presided over by Mr. Arthur Keen, of persons and societies interested in the maintenance of Waterloo Bridge. Mr. Norman announced that representations as to the possibility of preserving the Bridge would receive consideration from your Council.

The problem has again been fully examined.

A very large number of engineers and architects, after protracted enquiry, endorse the opinion that Waterloo Bridge can be preserved. It is natural, in point of fact inevitable, that divergencies of opinion should arise as to the best method of dealing with one detail or another ; this is incidental to the treatment of so large and so technical a problem ; but the unanimity on the broad question at issue is noteworthy, and will command attention. Should the main argument be conceded by the London County Council, there should be no difficulty in adjusting the various details of the work.

The report (of about 25 pages) conveys the considered views of the following institutions and societies, namely, the Royal Academy, the Royal Institute of British Architects, the Society for the Protection of Ancient Buildings, the Architecture Club, the London Society, the Town Planning Institute, together with the opinion of individual engineers and of a group of engineers (acting under the chairmanship of Sir Wilfrid Stokes) who endorse the opinion, on technical grounds, that the Bridge can undoubtedly be preserved.

Of the individual engineers whose reports are included in the Appendix, Mr. H. H. Dalrymple-Hay has had a very wide experience of underpinning and of similar problems in connection with the London Tube Railways. Mr. Bengough's experience in underpinning the high-level bridge at Newcastle under similar conditions to those prevailing at Waterloo Bridge renders his opinion of exceptional value. Mr. Crutwell's (Sir John Wolfe, Barry and Partners) work on the Tower Bridge and the widening of Blackfriars Railway Bridge enhances the value of his opinion. Dr. Faber has specialized for many years in problems of foundations subject to settlement and decay, while the report of the group of engineers, which is also included, claims attention by the unanimity of the opinions which are based on the cumulative experience of men engaged in difficult engineering problems.

The following is a précis of the Report presented to the London County Council asking that the decision to destroy Waterloo Bridge shall be reviewed.

1. Brief History of the Bridge.

(Already communicated by Deputations to the London County Council).

Waterloo Bridge was built by a public company pursuant to an Act passed in 1809. The first stone was laid on 11 October, 1811.

In 1816 it was named Waterloo Bridge by Act of Parliament. The Act recites :—

" . . . The said Bridge when completed will be a work of great stability and magnificence ; and such works are adapted to transmit to posterity the remembrance of great and glorious achievements. . . ."

The Act goes on to declare that :—

" . . . The name given to the Bridge shall be a lasting record of the brilliant and decisive victory achieved by His Majesty's Forces in conjunction with those of his allies."

It thus became a national monument, and was opened to the public by the Prince Regent on 18 June, 1817.

Waterloo Bridge was designed and carried out under the supervision of the engineer and architect, John Rennie. It is built of Cornish granite from the Penrhyn quarries. The cost of the Bridge was £565,000. The approaches, land, buildings and contingencies brought the total cost up to £1,050,000.

2. Its Importance as a Monument.

Waterloo Bridge is the only bridge in London which possesses a name of real British importance—a name, in other words, which is not localised or territorialised—and probably the only monument in London of the nineteenth century which commands world-wide admiration.

3. Its Architectural Design.

Waterloo Bridge is in itself a magnificent structure, most notable, perhaps, in the extraordinary distinction of its junction with Somerset House. The unity of its architectural design with that of other monumental buildings of London is an architectural achievement which is universally admired, and shows the designer to have been an artist of great imagination. It is, in fact, one of the most notable stone bridges ever built.

Its architectural beauty is dependent on the size of the arches. These arches are almost of the maximum span compatible with the level roadway above and with stone construction. Between the existing level of the roadway and the high-water level of the Thames a wider stone arch of the same form would not be satisfactory on constructional grounds. A wider span might have been obtained by a segmental form of arch, but this would have necessitated deeper spandrills and the waterway would not have been improved on account of the loss of headway near the piers.

A marked sense of scale is imparted by the detail, by the relative size of the stones and by the introduction of the column, the entablature of which is detailed to suit the material. The designer shows an understanding of the use of traditional form and the value of simple lines.

The proportion of the width of the arches to their depth is a factor in the design on which much depends. Widening would destroy it, projecting footpaths would interfere with the form of the entablature, and corbelling-out would give a character not to be associated with a monument so definitely classical in all its lines.

4. History of Subsidence.

The subsidence of the Bridge began many years ago. The flow of the stream has been increased by the removal

of older bridges which acted as breakwaters to the tides, while the embankment of the Thames on one side, and the growth of wharves on the other, have influenced the currents and scour. The increased tonnage and power of shipping has also increased the river wash. Recently the subsidence became more threatening, particularly at pier No. 4. The London County Council decided to grout, but in the process loosened the gravel adjacent to and supporting the pier (p. 4). Settlement proceeded at an alarming pace—eight inches in a few days. Grouting operations and all traffic over the Bridge were stopped ; subsidence then ceased. The adjoining arches were strengthened with centering supports, and 1,564 tons of material were removed from the roadway (p. 4). The inherent strength of the pier was vindicated by the manner with which it withstood a serious weakening of its foundation. A further tribute to the strength of the Bridge is perhaps afforded by the confidence with which the London County Council engineers are using it as the wharf upon which to assemble girders for the temporary bridge. These weigh about 600 tons, and will be moved from the old Bridge on to the piers of the new bridge. The process must involve strain on the East side of the Bridge, and it is unfortunate that it should have been considered necessary to remove the fine entablatures and to mutilate the coupled columns. Mr. Norman (Chairman of the Special Committee on Thames Bridges) stated that this was done in order to protect them from injury (*Times*, 26 April, 1925) though it is now announced that the cutting-away was partly to counter-balance the weight of the new girder. It would appear that the mutilation is an afterthought.

The Subsidence of the Bridge has now been arrested. The report of the Conference shows how, by means of underpinning, Waterloo Bridge can be saved.

5. Allegation that the Bridge is in Danger of Collapse.

The London County Council report of 2–9 February, 1925, p. 45, says it is " established that the old bridge is worn out and has to be taken down to prevent its falling down." This statement is emphatically contradicted in the following pages. Even making allowance for the grave results of grouting at pier No. 4, considered arguments are advanced by engineers of experience that the Bridge can undoubtedly be preserved. The London County Council quote the Institution of Civil Engineers as endorsing the opinion that the Bridge will collapse. It is well known that this interpretation has caused surprise amongst engineers, many of whom expressly repudiate such a generalisation on a technical matter. The Council of the Institution of Engineers, however, has not contradicted this interpretation, and therefore the considered opinion of Engineers who oppose this view is important. These Engineers, who are men of great experience, are confident that underpinning the defective piers is feasible. Sir Francis Fox exposes the fallacy that the timber piling is necessarily decayed below low water level, and quotes striking examples, proving that such timber can fulfil its function of foundation piles for many centuries (p. 21). This view is confirmed by all the evidence at the disposal of the conference. It is also asserted that the stone is seriously decayed. Here again, in spite of the fact that the stress in the masonry has been increased by the neglect to arrest movement in recent years, as well as by the disturbance caused by the " grouting subsidence " of March, 1924, the Report (p. 4) shows that fears about the stone are much exaggerated. The crushing load on these stones is an insignificant fraction of their full power of resistance ; moreover, the fact that the colour is uniform in tone shows that the surface is not crumbling away. It is now proved from samples tested that there is nothing in the quality of the granite or in the existing fissures which makes preservation impracticable (pp. 4, 5, 18, 23).

6. Proposed Treatment.

Mr. Dalrymple-Hay's report (printed pp. 13–15) shows by successive steps how the Bridge can be saved : he meets every objection in turn, and advocates the replacement of the existing foundations by solid concrete and brickwork. In order to do this, compressed air chambers would be used. His scheme, which was adversely criticised by the Engineer and Advisers to the London County Council, has been examined by a large number of practical engineers ; a striking measure of agreement is shown in their reports. There is occasional difference on questions of detail, but the fact that all agree on the main contention should satisfy everyone that preservation is quite possible. One report is printed dissenting from this view and supporting that of the London County Council Advisers (p. 24), but the overwhelming balance of authority and independent judgment outweighs the views upon which the decision to destroy the Bridge is founded. It should be added that several experienced Contractors entertain no doubt that the Dalrymple-Hay scheme, supported by so many other engineers, can be safely executed.

7. Danger to Life.

The opinion of the London County Council that the process of underpinning would be more dangerous to life and limb than rebuilding the Bridge is emphatically contradicted (see p. 6). Indeed, it is held that underpinning is the less perilous of the two methods. At a certain stage in the demolition of the existing Bridge during the removal of the stones of the arches there would be danger that a collapse might occur which would entail the fall of adjacent arches. To avoid such a contingency the arches would have to be centred, i.e., shored up by additional supports from below. It is probable that to make this centering adequate to prevent collapse, River traffic would have to be stopped ; in any case it would be much impeded. On the other hand, it is clearly stated that with due precaution, compressed air can be used with the minimum risk to workmen (p. 15).

8. Cost in Time and Money.

As regards finance, it is noted that rebuilding on the lines proposed by the London County Council will cost £988,000, in addition to an unspecified sum for abutments and perhaps the first pier to the North. The Highways Committee recommend that if the Bridge is reconstructed, the new breadth should permit a double line of trams. No estimate is given for this, nor for a proposed subway under the Strand ; but a new 75 feet bridge would cost £1,295,000, exclusive of very large ancillary services. (Report 2–9 February, 1925, pp. 45–6.)

On the other hand, underpinning will cost from £400,000 to £690,000 : like the London County Council

estimates, these figures are provisional, but even the highest figure shows a large economy. Underpinning would require two to three years, rebuilding twice as long. The economy in time of underpinning as against rebuilding may well prove far more valuable financially to the public than the actual economy in cost of works. In conbination, therefore, underpinning is much the cheaper alternative. The difference between the cost of underpinning and the cost of a new Waterloo Bridge would go far to meet the outlay on the new Lambeth Bridge.

9. Questions of General Traffic.

The fundamental object of the report is to show that the Bridge can be saved ; but traffic questions arise, and it is argued in the Report that the Bridge to-day can carry all the traffic which its width and the existing volume of Strand traffic permit it to discharge. Without costly works at the Strand junction, and in the great triangle south of the Thames, the widening of Waterloo Bridge wastes money urgently needed for bridges elsewhere.

The Bridge problem should be considered as a whole, and though the report does not outline a scheme for Charing Cross or the Temple it is made clear that this aspect of the problem is crucial.

10. Request for Reconsideration.

The London County Council undertook to consider evidence rebutting the decision to demolish the Bridge. It is submitted in the Report that an unanswerable case is now presented, showing that on technical, artistic, and traffic grounds, destruction of the Bridge cannot be justified.

30 June, 1925.

The Touchstone of Architecture*

By RONALD P. JONES [*F.*]

In the preface to this book the author remarks that artists are " not as a rule trained to compete with the gladiators of the pen "—connoisseurs, critics and literary men in general. As he is himself one of the few living architects who is fully able to meet them on their chosen ground, and more than hold his own there, one opens a new volume bearing his name with a specially pleasant expectation, which is partly disappointed when it is discovered that the essays contained therein are old friends which would usually be described as " Collected Addresses," and that the more decorative title implies merely that they were written and delivered by an architect and represent his point of view.

Even the exordium of the moment remains—" It is an honour to me to have this opportunity of addressing you . . . I have to-day had the pleasure of going round your schools with Mr. So-and-so "—though this event took place as long ago as 1913. This verbatim method, however, may be justified on the ground that it keeps before the reader's mind the date and occasion of the address and a certain atmosphere of actual delivery which an abstract essay would not possess.

Seven of the addresses deal with the fine arts in general, and provide an interesting survey of their history in the last hundred years, their present position, and their future prospects, including the consideration of the training of the artist, his status with the public, and his successive voyages on and off the track of classical tradition, imitative revival, and nightmare originality.

As we should expect, the author stands for, and successfully upholds, a sound but enlightened conservative policy in regard to tradition and precedent, and does not mince his words in castigating various ultra-modern movements. In " Atavism in Art " the attractive suggestion is made that the sudden and surprising outburst of French Gothic architecture in the twelfth century may have been due to the Celtic element in the national character emerging and asserting itself against the Roman strain which had produced Romanesque art as its last development ; while another address discusses the problem of sculpture, stained glass, and decorative painting in their association with architecture.

Apart from these are three essays on independent subjects, the first, " London Bridges " from Hammersmith to the Tower, in which the Victorian suspension bridges are severely criticised, and which has a special interest at the moment in the matter of Waterloo Bridge.

It is noted that Rennie derived the idea of the coupled columns from the earlier Blackfriars Bridge, where Mylne had used Ionic columns in the same way ; indeed, the case of these two and the later Blackfriars bridge is an interesting example of the fact that genius may break the rules with impunity and success, while lesser talent only comes to grief. In the abstract it is indefensible to use a column at all as a buttress or decorative element between the arches of a bridge, since it can only support a bit of parapet which is projected over it in order to be supported, but is not logically required. Rennie's Doric columns are approved and admired, and help greatly to make the bridge the supreme work of architecture that it is, while the fat, shiny granite column with a Romanesque capital on Blackfriars bridge is equally rightly condemned.

The author puts the question of what architect may

* *The Touchstone of Architecture*. By Sir Reginald Blomfield, R.A. [Oxford: At the Clarendon Press. 1925. 7s. 6d. net.

have had a hand in Rennie's design, seeing that he was so much less successful with the later London bridge; and the date seems to admit of various possible sources of Greek influence among the revivalists then flourishing.

The longest of the essays, that on Greek Architecture, formed a chapter in a recent collection of studies called "The Heritage of Greece," and restates the puzzling problem of the complete contrast between earlier and later Greek art; that of Cnossos and Mycenae, crude in architectural form, Eastern in its barbaric splendour of decoration, and modern in its insistence on the comfort and convenience of domestic surroundings; then a blank period of centuries, like the Dark Ages after the fall of the Roman Empire; and finally the growth and flowering of the austerely intellectual perfection of the Periclean age, careless of domestic life and concentrated on civic and religious magnificence.

Two of the outstanding qualities of classical Greek architecture are touched upon, which distinguish the Greek point of view from that of most later periods in Europe. The author remarks that in the transition from timber to masonry construction the system of post and lintel was not altered to suit the special qualities of masonry, and adds that the Greek was "incurious about construction *qua* construction, being concerned solely with the æsthetic appeal of his building." This is true, and may be strengthened by noting the Greek objection to visible joints, which are an essential part of all built-up masonry, and in medieval architecture are always insisted upon and contribute largely to the total effect of the structure.

The Athenians, in fact, regarded architecture from the sculpturesque position. They spent incredible pains and ingenuity to render invisible the joints in the columns of the Parthenon, and if they had commanded the resources of modern machinery they would undoubtedly have cut each column from a single block; indeed, it may even be said that they would have preferred, if possible, to cut the whole of the Parthenon from a single block, and thereby eliminate all signs of the process of construction.

Secondly, he observes that the Greeks "devoted their attention to the external elevation, and may have been more successful with the outside of their buildings than with the inside." This emphasis on the external is part of the Greek point of view. Owing to their custom of carrying on the whole of their public and civic life in the open air, they conceived their architecture as an external design and left the interior arrangement of a temple, for instance, entirely unexpressed in its outward appearance, so that the Parthenon gives no indication to the observer of the fact or the position of the internal division of the cella, nor even at which end of the building the main entrance may be found.

To such an extent did they carry this "externality" that (as we happen to know from the accidental case of Segesta) they actually constructed the temple from the outside inwards—first the colonnade, then the cella.

In the study of Wren, written at the time of the Bicentenary in 1923, the author has a subject after his own heart, the man whom he boldly claims to have been," on the whole, the greatest architect known to history." He does, however, emphasise the fact that Wren's introduction to architecture was the result of a "discreditable job." We are so accustomed to the contemplation of the brilliant and long-continued career which that job inaugurated that we hardly realise the supreme good luck by which Wren was discovered to possess, or was able to acquire, architectural genius. For when he was appointed to the office of Surveyor-General (over the head of Webb, who had the reversion of it) for the rebuilding of the City, St. Paul's, and the rest of the churches, he was merely an eminent scientist and astronomer who up to that time had made only two ventures in architectural design, for which he had had no sort of professional training.

Suppose that the luck had then been against London, what architectural catastrophes might have resulted from this appointment, to the everlasting discredit of Evelyn and the others who engineered it!

As an appendix to this essay, there is added a very useful account of the present position of the "threatened City churches," caused by the passing by the Church Assembly of the Measure of 1924 relating to them. We are clearly warned of the risks involved and the inadequate safeguards provided, and, among other arguments, the pertinent question is asked why newly developed suburban districts in need of churches should have them provided by the sale of other churches in older districts rather than by the contributions of their own parishioners.

It is not easy to say just what gifts of style make any author "readable" or otherwise. We are in the position of the man who could not define an elephant but easily recognised one when he saw it. Sir Reginald Blomfield is always and undeniably "readable," and these essays and addresses, in spite of their differences of date and origin, all show the same attractive clearness of thought and vigour of expression, which at times partakes of pugnacity when he touches upon certain historic names which are to him as red rags to a bull; while they are adorned and enlivened by that wealth of analogy, quotation, and classical allusion which the Oxford School of Literae Humaniores claims, not without justice, to bestow for life on her most brilliant disciples.

Correspondence

SIR GEORGE GILBERT SCOTT AND THE R.I.B.A.

The Arts Club,
27th June, 1925.

SIR,—With reference to the recent award of the Gold Medal to Sir Giles Gilbert Scott, I think it may be of interest to your readers to read a letter in my possession written 91 years ago by Sir George Gilbert Scott (the grandfather of the recipient) to my father, Mr. Edwin Nash, especially as it alludes to the existence of two architectural societies at that time and Mr. Gilbert Scott's difficulty in making a choice.

W. HILTON NASH.

8, *Warwick Court,*
10th Feb., 1834.

MY DEAR FRIEND,—I was sorry, on calling on you at the office this morning, to find that you had been kept away by indisposition, but as colds are rather the fashion just now, I hope it is only by one of these minor maladies that you have been detained. My object in calling on you was chiefly this. I find from the turn which this new Architectural Society has taken, that I shall probably not be able, and pretty certainly not disposed, to join it. The committee which were appointed to construct the rules, etc., being mostly senior members of the profession, have nearly determined on excluding all persons who are not established in business. This, if carried, will, of course, exclude me, and even if it should not be carried, I should not be disposed to join a Society, the majority of whose members were senior members of the profession, which will certainly be the case with this, as I could not at all join or take a part in its proceedings, and should therefore lose what I consider to be one of the great objects in such associations, the stimulus which they afford to individual exertion. I therefore determined on asking whether you could lend me your aid in gaining admission into the Society to which you belong. I do not know whether there is much difficulty in gaining admission, but if you could put me in the way of it and mention my name to any influential members whom you may know, I should feel much obliged. . . . . Excuse the hasty style in which I have written, and my mentioning nothing but my own business, which merely arises from my having hitched on a moment when time happened to be scarce. I shall be most glad to see you when it is convenient to you.—Yours very truly,

GEO. G. SCOTT.

B.S. SPECIFICATION FOR STRUCTURAL STEEL.

The following letter has been received by Mr. Max Clarke from the Secretary of the British Engineering Standards Association :—

" *British Engineering Standards Association,*
28, Victoria Street, Westminster, S.W.1.
26 June, 1925.

" Dear Sir,—Revision of B.S. Specification for Structural Steel for Bridges and General Building Construction (Report No. 15, 1912).

" You will remember that at the last meeting of the Sectional Committee on Bridges and General Building Construction held on the 17th April, a small panel was appointed to consider the revision of the above Specification, and to submit proposals to the Sectional Committee in regard to the suggestions for revision already received, and any other points which might arise (see page 6 of M(C) 3405).

" I should be very glad if you would kindly bring to the notice of the Royal Institute of British Architects the fact that the Specification is about to be revised, and let me have a note of any comments and proposals your members may wish to make so that the points may come up for consideration when the panel meets to discuss the matter.

" The meeting will, in all probability, not take place until after the summer holidays, as the Local Committee of the Association overseas have also been asked to forward proposals, and it is hoped that these may be available in about three months' time.

" The comments which have already been received were sent to you in connection with the last meeting of the Sectional Committee and are numbered CA(C) 8431, 8509 and 8517.

" Hoping to hear from you in due course—I am, dear Sir, yours faithfully,

" (Signed) CHARLES DRESSER,
" for the Secretary."

THE BIRTHDAY HONOURS.

The congratulations of the architectural profession will go out to Mr. H. A. Crouch [*F.*] on his receiving the decoration of the C.I.E—Companion of the Indian Empire—in the recent Birthday Honours list, which rather suggests that the barrier against the official recognition of architectural services has at last broken down.

Mr. Crouch is now home on leave preparatory to retirement under the age-limit, after sixteen years' service as Consulting Architect to the Government of Bengal. For a year of that time—in 1911—he also officiated as Consulting Architect to the Government of India. A few of Mr. Crouch's more important works may be mentioned. Several of these have already been tabulated in the annual—or latterly triennial—reports of the Government of India, and may, it is believed, be found in the Institute Library: Central Telegraph Office, Calcutta; Headquarters for the Calcutta Police, various district Police Stations; School of Tropical Medicine and Hospital for Tropical Diseases, Eye Hospital and Medical College Hospital—all in Calcutta; Technical and Training Schools and Colleges in Calcutta, Dacca and elsewhere; numerous hostels attached to colleges; Secretariat, Dacca; Post Offices, Judges' Courts and administrative buildings; additions to Viceregal Lodge, Simla, and to the Government House at Darjeeling, Calcutta and Dacca; numerous residences for officials; churches, numbers of schools, and so on. Mr. Crouch also designed and carried through, in his unofficial capacity, extensive premises for three or four business and banking houses in Calcutta.

FRANK LISHMAN [F.],
Late Consulting Architect, Government of the United Provinces of India.

British Architects' Conference

NEWCASTLE-UPON-TYNE AND DURHAM.
8 TO 11 JULY 1925.

Inaugural Meeting 8 July

PRESENTATION TO MR. IAN MACALISTER

The inaugural proceedings of the 1925 Conference of the British Architects at Newcastle-on-Tyne took the form of a Smoking Concert at the Old Assembly Rooms on Wednesday evening, 8 July, as a preliminary to more serious business.

The President of the Northern Architectural Association, Colonel G. REAVELL, O.B.E., welcomed the members of the Conference and their ladies, and a musical programme was provided.

During a pause in the programme the opportunity was taken to honour Mr. Ian MacAlister, the Secretary of the R.I.B.A.; and Mr. T. R. Milburn, V.P.R.I.B.A., presented him with a gold watch, accompanied by a substantial cheque, in recognition of the eminent services he has rendered both to the profession and the Institute as Secretary.

Mr. MILBURN, having referred to the fact that Mr. Buckland had been largely instrumental in doing a great deal of the work in connection with the testimonial, said he had been connected so long with the Royal Institute that he could remember no less than three secretaries—Mr. W. H. White, Mr. W. J. Locke, and lastly Mr. MacAlister. The work of the Royal Institute had increased enormously during the last few years, and no one who was not a member of the London Council could possibly have any conception of the amount of work which fell upon the shoulders of the Secretary. The meetings of the Council were fortnightly and this involved constant work, and in addition there were the elections and, above all, the great question which had been agitating their minds for so many years—the question of registration. All these matters meant a tremendous amount of work for a secretary. Apart altogether from that, there was the question of Mr. MacAlister's geniality. Mr. MacAlister was very popular, and deservedly so; a man might have all the necessary and admirable attributes of a business life, and be what was termed quite a good man, but there was something beyond that, and that was affection. Apart from the work which Mr. MacAlister had done and was doing, all the members had an affection for him, and it was no exaggeration to say that Mr. MacAlister was loved by all the members of the Royal Institute. In addition to all the work thrown upon him, Mr. MacAlister had, during the past few years, devoted himself to the problem of the unification of the Allied Societies with the Royal Institute. Some years ago when the Allied Societies went to London they were not in as strong favour as they were now; the London men now welcomed them and were ever ready to help them. This closer association had been largely due to the work of Mr. MacAlister. All these things combined had culminated in the recognition which they were making that night of the services which Mr. MacAlister had so splendidly and unselfishly rendered to the Royal Institute in particular and to the profession in general. "It is my great pleasure and privilege," concluded Mr. Milburn, "to ask your acceptance, Mr. MacAlister, of this gold watch and accompanying cheque as a mark of the esteem and affection which we all have for you personally and of our appreciation of the eminent services which you have rendered to the Royal Institute. The cheque does not in any way represent all your worthiness. Ten thousand pounds would not be sufficient to recognise all you have done, but I know that you will regard this testimonial as the heartfelt expression of our affection for you and as a symbol that we are not unmindful of all you have done for us."

The watch bore the following inscription: "To Ian MacAlister, from the Societies allied to the R.I.B.A. In grateful recognition of his unfailing courtesy and devotion to their interests. July 1925."

Mr. H. T. BUCKLAND, as one who had taken a little part, as he described it, in getting together the subscriptions for the testimonial, said the inception of the idea was not his, but Mr. Thomas's, that the services of Mr. MacAlister should be recognised in some tangible form, and when the suggestion was made there was not a man in the room who did not feel like kicking himself because he had not been the first to make the suggestion. Mr. Buckland added that the collection of the subscriptions was a matter of the utmost ease; in fact, when the members were written to cheques literally tumbled in, and that was the best possible evidence they could have of the popularity of the recipient of the testimonial.

Mr. MACALISTER, who was evidently touched by the warmth of the expression of the donors of the gift, said it was exceedingly difficult for him to express adequately his thanks for their most generous gift, which was far more than he deserved. He felt that he was but a symbol of a great many other men. The work which Mr. Milburn had described so clearly had been going on for some years, and the credit of it

was due to certainly not less than a hundred members, Past-Presidents, Presidents, Honorary Secretaries, and others. It happened to be his fortunate lot to be there on the spot at the crucial time—the psychological moment, but they must realise that the result which had been achieved could not have been obtained without the devoted self-sacrifice and the united efforts of others. The work had required and obtained a great deal of unselfish labour, and for himself he was lucky enough to be there at the fruition of all that labour. He rather thought his friends had taken an exaggerated view of what he had been able to accomplish. All through it had been an intense pleasure to him to do what he had been able to do, more particularly because the result which had been achieved would be of permanent value, and it was a great pleasure to see the matter clinched in the past year. For himself he might say that as the result of this coming together there was not a town in the country into which he might go without finding friends there. In conclusion, Mr. MacAlister reiterated his thanks to all who had so generously recognised any services he had been able to perform.

Mr. E. GUY DAWBER said that as President of the Royal Institute of British Architects he would like to add his heartiest congratulations to Mr. MacAlister on the recognition which had been made of his invaluable services. "Every word that has been said about him," proceeded the President, "is true. His geniality and kindliness and readiness to help any one of us in difficulty without exception is known to us all, and it is a very great pleasure to those members of the Institute who know him and what he has done to see this generous recognition of his work and ability."

At the conclusion of the performance of the last item on the programme, the President of the Royal Institute expressed the cordial and grateful thanks of the guests of the evening to the President and Members of the Council of the Northern Architectural Association, not only for the most delightful entertainment they had given them, but for their cordial welcome. "I can assure them," added Mr. Dawber, "that we very greatly appreciate it, and we want to thank particularly the members of the Executive Council for having arranged such a delightful programme. I am quite convinced of this, that if the rest of the programme is carried out in any way commensurate with to-night's entertainment we shall really have one of the most successful conferences we have had for many years. I find on looking at our KALENDAR that with the exception of Liverpool, the Northern Architectural Association is the oldest in the country, and it has given the profession some of the best men from the provinces who have done most delightful work in all parts of the country. I am looking forward to seeing in Newcastle some of the evidences of their work. I am glad to see, also, that the Northern Association has lately enlarged its sphere of action and has established branches so as to enable members who live in distant parts of the county, and are unable thereby to join the parent centre, to keep in touch with them in the same manner as our Allied Societies are in touch with us. If we can only establish these branches in various parts of the country it will all help to encourage and foster the position of the profession in those particular districts; and I feel that is one of the matters that we want to encourage. This is not an occasion for speech-making, I know, but I do want, on your behalf, to tender to Colonel Reavell and the members of the Council our most grateful thanks for the delightful entertainment which we have all so much enjoyed."

Mr. H. T. BUCKLAND, in formally seconding the vote of thanks, said he was sure all the visitors would most heartily endorse it. "I do not know what is going to happen at future conferences," added the speaker, "but each succeeding conference has been better and better and better, and I do not know what the conference which follows this one is likely to be, after such an excellent entertainment as has been given to us this evening."

Acknowledging the vote of thanks, Colonel REAVELL said his Association and Council were more than repaid for anything they had done if the night's entertainment had given them pleasure. The remark had been made, in the course of the evening, that they had with them visitors from all parts of the country. He took that opportunity of welcoming a visitor from the United States of America, Mr. Corbett; and they also had with them visitors from Australia and South Africa. The Colonel also mentioned that he had received a letter that afternoon from one of their oldest members, Mr. Rich, who retired from practice long ago, and who remembered the time when it was a severe struggle to get six or eight members together to form the Northern Association, and as a veteran Mr. Rich desired to send his respects to the President of the Royal Institute. In conclusion, Colonel Reavell said there really was nothing which called for all the kind words that had been uttered, but he wished to take the opportunity of saying that his share of work had been very small. It only remained for him to express the hope that they would all have a good time in Newcastle.

Visit to Durham

Most of the hours of the 10th July were devoted to a visit to Durham. By special train the members journeyed from Newcastle, and on their arrival immediately proceeded to the Town Hall, in Market Square, where they were received by the Mayor of Durham, Councillor T. W. Holiday, who was accompanied by Alderman Robert McLean and Alderman R. T. Herring. At one end of the hall was displayed the civic plate, which was inspected with the greatest interest by the visitors.

The MAYOR, in welcoming the visitors, said : We in Durham are very proud indeed that the members of the Royal Institute of British Architects have come here, and we hope that you will take the opportunity of thoroughly inspecting and taking note of what I understand will be shown to you to-day. The President informed me just now that this is his first visit to Durham, but I feel sure that when he goes away this evening he will have formed the resolution that it will not be very long before he comes back here again.

Mr. E. GUY DAWBER, acknowledging the mayoral welcome, said : This is a visit which I think will prove the most interesting of our Conference programme, and though it is true that I have never previously visited your city—I may say this, that I have seen it several times in passing through the railway station, from which point you get a most beautiful view—a view which I have never seen equalled in England or in Europe.

I should like to take this opportunity of congratulating you on the beautiful hall in which we are now sitting. I understand that it was built fifty or sixty years ago ; it is a delightful and most dignified room, and the use you have made of heraldry in its scheme of decoration adds to its dignity and interest. There is one matter which I should like to mention, and that is the opportunity you have given us to inspect your civic regalia, which I understand is unique, and I am sure that the inspection of it will give our members the greatest pleasure and interest.

The members then visited the Cathedral, where they spent over two hours and where Professor Hamilton Thompson discoursed on its various interesting features.

Subsequently the visitors were the guests at luncheon of the President and Council of the Durham Colleges in the Lecure Hall, Palace Green.

The visitors then made a tour of inspection of the ancient castle under the guidance of Mr. W. T. Jones, F.S.A., whose knowledge of the castle and its history is unsurpassed.

The Conference Banquet

10 JULY 1925.

The Conference Banquet took place at the Old Assembly Rooms, Newcastle-on-Tyne, under the Presidency of Mr. E. Guy Dawber, F.S.A., President of the Royal Institute of British Architects. The company was a distinguished and thoroughly representative one, comprising as it did men eminent in all the professions and in civic and municipal life. Supporting the President were the Lord Mayor of Newcastle and the Lady Mayoress, Sir George Renwick, Bart., D.L., J.P. ; Lt.-Col. George Reavell, President of the Northern Architectural Association ; Canon H. Ellershaw, Master of Durham Castle College ; Mr. T. R. Milburn, Vice-President, R.I.B.A., Mr. Cecil A. Cochrane, J.P., M.A., D.C.L., Chairman Armstrong College ; Mr. John Keppie, A.R.S.A., President of the Incorporation of Architects in Scotland ; the Mayors of Durham, Hartlepool, South Shields and Jarrow ; the Sheriff of Newcastle; Mr. R. C. Bosanquet, M.A., F.S.A. ; Mr. Arthur Keen, Vice-President, R.I.B.A. ; Mr. Robert Temperley, M.A., D.L. ; Professor A. Robinson, M.A., D.C.L., Master of Hatfield College, Durham ; Mr. J. Inch Morrison, President, Edinburgh Architectural Association ; Mr. W. T. Jones, F.S.A., Mr. Charles F. Ward, President, South Wales Institute of Architects ; Mr. H. Alderman Dickman, President, Nottingham and Derby Architectural Society ; Mr. Percy Thomas, O.B.E. ; Mr. Harold S. Rogers, M.A., F.S.A., President of the Berks, Bucks and Oxon Architectural Association ; Mr. G. Dale Oliver, Chairman, Cumberland Branch Northern Architectural Association ; Mr. T. W. T. Richardson, Chairman, Tees-side Branch, N.A.A. ; Professor C. H. Reilly, Liverpool University ; Professor S. D. Adshead ; Mr. R. Norman Mackellar ; Mr. Ian MacAlister, Secretary, R.I.B.A., and many others.

After the loyal and patriotic toasts had been given by the President—

The LORD MAYOR OF NEWCASTLE-UPON-TYNE (Mr. Walter Lee, J.P.) : Mr. President, Ladies and Gentlemen,—I have the pleasure of proposing the toast of " The Royal Institute of British Architects and itsAllied Societies." After briefly recapitulating the early history of the R.I.B.A. the Lord Mayor said : The Institute is the representative body of architects in this country and the parent body of the architectural societies of the whole Empire. The societies affiliated to the Institute in these islands number, with their several branches, not less than 37, whilst the Allied Societies Overseas, in Africa, Australasia, Canada, India, and elsewhere, number 22. This great confederation of architectural societies embraces more than 10,000 professional men, and exercises a powerful influence on the development of architecture throughout the whole Empire. It controls or guides the whole system of architectural education, and its services in an advisory capacity are at the disposal of the Government, the great municipal authorities and the public generally, in all matters concerning the art of architecture.

One of the oldest, strongest and most energetic of the Allied Societies is the Northern Architectural Association, which so kindly undertook the organisation of the British Architects' Conference this year. The Northern Architectural Association was founded in the year 1858 and became an Allied Society of the Royal Institute of British Architects in the year 1889. It contains about 250 members, divided into Tyneside, Teesside and Cumberland branches. It is playing an ever-increasingly important part in the work of the Royal Institute of British Architects.

Among local gentlemen who have held the position of President of the Northern Architectural Association are Colonel Reavell, of Alnwick, Mr. W. T. Jones, of Durham, Mr. T. R. Milburn, of Sunderland, Mr. R. Burns Dick, of Newcastle, Mr. C. S. Errington and Mr. J. T. Cackett, who has also for many years filled the office of Honorary Treasurer. Mr. T. R. Milburn, to whom I have just referred as one of the past Presidents, has, we are glad to know, just been elected a Vice-President of the Royal Institute of British Architects, after years of valuable services on its Council.

Members of this Conference, and particularly those from a distance, will have been much struck by the architectural beauty of some of our streets.

I might be permitted to make a passing reference to the Newcastle-upon-Tyne Society, which is a body of energetic and enterprising local gentlemen who, as a labour of love, are making a close study of a possible Newcastle beautiful, and in this connection I may say that we, as a City Council, are always prepared to receive their friendly criticism and suggestions. I remember Newcastle for almost a quarter of a century. I have seen many mistakes made ; and I know that the Council feel very grateful for the manner in which the Newcastle Society have taken up and put before us practical schemes of town planning.

We have had Newcastle men associated with your profession whose reputations have spread far and wide. There are big schemes for street improvements under the consideration of the City Council, and it is just possible that such opportunities may shortly be forthcoming for the display of architectural genius, that there may yet arise another Dobson and another Grainger who will add lustre to the history of the architectural profession in this city.

It is with very great pleasure indeed that I submit to you the toast of " The Royal Institute of British Architects and its Allied Societies."

The PRESIDENT (Mr. E. Guy Dawber) : The Conference that has just finished, or practically finished, I think I may safely say has been one of the most successful we have had. It gives us an opportunity of meeting old friends and making new ones, of visiting, under the most favourable auspices, buildings of the greatest historical interest, and also of talking over with our fellow architects the problems that we have to deal with every day. That, as well as hearing papers of deep interest to the profession, is the object of these Annual Conferences.

You have, Sir, told us a lot about the Institute, but there are one or two things you have not mentioned. One is that during the last 25 or 30 years we have established and co-ordinated a system of education such as in my young days was unheard of. All through the country now we have a series of Schools of Architecture. We are training our young men in design, in construction and in the practice of architecture. I think, Sir, that that is a record to be proud of, and I want to say in this room that it has been through the help and enthusiasm of the Allied Societies that the parent body has been able to promote those schemes. In addition to that, some 30 or 40 years ago, when I first went to London, the Royal Institute of British Architects consisted entirely of London men, allied with some country members, but in those days they had little voice in the control and management of the affairs of the Institute. How different it is to-day ! We have nearly sixty Allied Societies connected with us. We are one great federation of architects all over the Kingdom and wherever the British flag flies ; and our one object, I may safely say, in the words of our Charter, is " the encouragement of Civic Architecture." That, Sir, is really what we are out for, and we feel that in this connection the Allied Societies are the greatest possible help and strength to us as an Institute.

My Lord Mayor, you have a very great responsibility put upon your shoulders. To control the amenities of a great city like Newcastle-upon-Tyne is no light matter, with your many other spheres of work, but it is to you and the other heads of the great Corporations all over this country that we look for help with the future planning, the laying out wide spaces and beautifying our streets, which we hope is going to make an entire alteration in the future of our towns and cities throughout the country. There is no doubt, Sir, you and others are waking up to the great responsibilities that have been placed upon you, and I may safely say that we architects, and the Royal Institute in particular, are only too pleased to place our services at your disposal at any time you wish to call us in.

I should like, on behalf of the Institute, to convey our gratitude to Colonel Reavell and his Society for the delightful programme they have prepared for us.

Mr. JOHN KEPPIE : I think the members of the Royal Institute of British Architects ought to be very proud indeed to be entertained by the Northern Association in such a city as Newcastle-upon-Tyne. I took a little trouble when Mr. MacAlister wrote to me to ask me to reply to this toast, and I discovered that Newcastle-upon-Tyne is a city with a most remarkable record. Would you allow me just to give you a short note of what the results of my researches were. I find that you have among the citizens and those who were born in the immediate neighbourhood, Lord Eldon, the great politician, and Lord Collingwood, one of the most distinguished naval officers that ever entered the Navy. Then you had Mark Akenside, the poet. You had two Stephensons, and both of them were very distinguished ; first of all, Stephenson who invented the engine, and who made railways. And then you have, I believe, his son ; he was a great bridge builder, and I think a great architect. It was my good lot on one occasion to visit Berwick-on-Tweed, and I dwelt in the immediate vicinity of the Border Bridge. I have no hesitation in saying that there is not a finer architectural erection in Britain than the Border Bridge. It is a great conception. Then you have had scientific people such as the naturalist, Thomas Belt, who knew all about Nicaragua. There was Grace Darling. Grace Darling dwelt in the neighbourhood of Newcastle, and was she not very fine ? Then you had Thomas Bewick, the engraver. Then I come to a name that has a kind of personal equation with me. That was Joseph Crawhall. I do not think Newcastle knew much of him. Crawhall's father was an engraver. He was one of the men who supplied Keene, of " Punch," with the engravings of his best jokes. But the greatest production of Crawhall was his son Joseph, and he was perhaps one of the best artists we ever had in this country. I would like just to say I do not think that Newcastle quite appreciated Joseph Crawhall. He was a great artist and his pictures are now coming to their own.

The only other man I would like to mention is one of

your incomers, and that is Norman MacKellar. I am very proud to mention him because he is a Glasgow boy. As a fellow citizen I would feel rather neglectful if I did not say how much I appreciated his kindness and his attention to the Royal Institute at this Conference.

Lieut.-Colonel G. T. REAVELL : We as architects practise an art which has for us great responsibilities and great anxieties, but at the same time great opportunities which bring great rewards. There is the satisfaction of achievement and of creation, of seeing in brick and stone the embodiment of our idea, and while with our limited powers we cannot with the Great Architect of the Universe look round and say " Behold it is very good," we do sometimes have the joy of knowing that we have done a fairly good thing, and the generosity to acknowledge that our brethren have done a better one. Times have changed since the days when men like Da Vinci could be architect, builder, sculptor, engineer, and painter all in one, and buildings have become so complex that our versatility must in another way be as great as ever, and we do well if by skilful handling of a team we accomplish what the great masters achieved single-handed. No art can flourish except in a genial air and we hope for the day in this democratic country when every citizen will take the same interest in the mistress art as did the noblemen of the seventeenth and eighteenth centuries, who would have been more ashamed of ignorance of the principles of architecture than that of the rules of grammar. We trust that the presence of so many lay guests to-night augurs well for that. In this connection I am reminded that I am also speaking for the Allied Societies. The Institute has found, as the British race found, that, freely yet firmly knit by the bonds of love rather than by those of red tape, the genius of our people best works out its destinies, and not only from Land's End to Cape Wrath, but through the colonies and dependencies of the British Crown the daughters and the parent Institute exchange counsel and help. I may perhaps give you a recent example which is interesting. I do not think the invitation from the Government of this great city to the Northern Architectural Association to nominate members to work with it in the development in the towns would have been extended to a body sitting in London. Your city has been the first, following the example of our American friends, to invite architects to co-operate in the improvement of the city. Resulting from this co-operation a scheme was evolved which provided a new thoroughfare, obviating in the most economical way the congestion which was certain otherwise to ensue, and would eventually add to the material resources and the æsthetic value of the city in a striking and farsighted manner. Although that scheme has suffered a check, it is a check arising not from a divided opinion on its merits, but from an honest difference of opinion on a matter of policy, and I feel confident that it will be carried to a worthy conclusion. No city that has looked its future in the face has regretted it. Paris has regained over and over again in cash value alone the expenditure incurred by Napoleon and Baron Haussman, and I ask you if for one moment London would exchange Kingsway for the congeries of mean streets it has swept away. We, my Lord Mayor, as a profession compliment your great city on its wise action and we look forward to its success. On behalf of the Royal Institute of British Architects and the Allied Societies I thank you, my Lord Mayor, for the way in which you have introduced the toast.

Mr. T. R. MILBURN, in proposing the health of the guests, said : We are very pleased to see among our guests to-night the Lord Mayor and Sheriff of Newcastle and the Mayors and Sheriffs of adjoining cities and towns. We also have with us the Master of Durham Castle, Canon Ellershaw, and we have the Chairman and Vice-Chairman of the Armstrong College, and also prominent members of the Bar and the sister profession of Law, together with Engineers and Surveyors representing kindred professions. They are all more or less interested in architectural problems and it is indeed a very great pleasure to us to see them at our banquet to-night. Certainly I must not forget to mention how delighted we are to see our lady guests. Then we have visitors from overseas, from Australia, from America, and from South Africa, though we do not look upon them so much as guests as members. I am glad also to welcome on behalf of the Institute the civic heads of surrounding municipalities who have honoured us with their presence this evening. We also welcome the Chairman of Armstrong College, being, as we are in the North, closely connected with Armstrong College. My friend Mr. John Keppie has mentioned some well-known names, but I cannot excuse him from leaving out the names of Dobson and Grainger in connection with architecture, and our moderns such as Parsons and Armstrong. We all remember these names as being very closely associated with the progress of industry in the North and more particularly in connection with Newcastle. I couple with the toast the names of Major Temperley, and I need not tell you the enormous interest he has taken in the making of the " City Beautiful." I also couple with the toast the name of Mr. Bosanquet, who is also an honoured guest to-night and one whose name and reputation we honour.

Major ROBERT TEMPERLEY (in responding to the toast) said : I think you must all be very grateful to the local architects for having arranged this visit to Newcastle and to the President and other distinguished members of the Royal Institute for having honoured our town by visiting it. I may add one word as Chairman of the Newcastle Society, especially as the Lord Mayor has referred to us. On behalf of the Newcastle Society I beg to thank the local architects for the cordial welcome they have given us and for the help they have shown us. The Society started with the object of trying to foster wider interests in this locality, and we are concerned for the beauty of the place, for its historical interests, its general amenities and architecture, and its sound investments. It is rather a big programme and it may have been regarded perhaps by architects with suspicion and by the Lord Mayor and Corporation with some misgiving. From the architects we have had a most cordial welcome, and I think the Lord Mayor really hit on the best reason of all when he referred to the spirit in which we have embarked on our task as being a spirit, not of fussy interference and the driving of a fad to extremes, but by suggestions which will be helpful, and I think that has been fully recognised by the ex-Lord Mayor and the present Lord Mayor and the members of the Corporation and also by the members of the Northern Architectural Association. Two or three of that Association's members have given us very excellent help and we could not have done what we have been able to do but for them. We recognise that there is no need for fuss, because the public is ripe for a forward movement with regard to the beauty and completeness of the things that

surround us in our daily life, and we find that more especially among the working class people. I understand there is a scheme for a great street in Newcastle which will tend to the further development of the city, and though that scheme is checked for the moment I am sure it is a right step to take, and I do not believe for one moment that the present check is anything more than a temporary one. On behalf of the Newcastle Society may I express the hope and belief that this great scheme will eventually be carried through with the support and help of the very people who are now opposing it. I have been talking perhaps of a purely local matter, but I hope your visit here and that of your distinguished colleagues will have done something to call attention to the great importance of these things and that it may bring nearer the achievement of that object which we all long for and desire.

Mr. R. C. BOSANQUET : It is a very great honour which you have done me in asking me to be the spokesman for this very distinguished company. The gratitude which we feel is, as Major Temperley has so well said, justified by several reasons ; we are grateful to you for the good things which you have put before us to-night, the material good things, and the spiritual good things, the enthusiasm and kindness with which you have drunk our health. Further, we are grateful to the men of your calling for all you have done for the human race since it began to seek a better shelter than a cave on the face of this somewhat uncomfortable earth. What has rejoiced me very much is to hear from so many speakers to-night references to the city of the future, the " City Beautiful." Last Sunday I happened to be in Oxford, and my host at luncheon was also entertaining an American architect, and it so happened that we drew from this architect that, interesting as were the Colleges of Oxford, what he would like to see was the small English house. He said " My work is domestic work." We visited one of those old-world villages, and our American friend was filled with delight and admiration at its charm and beauty, and he said to one old inhabitant who was tottering down the village street, " What a beautiful place this is you have to live in." It was a Sunday, and I do not know whether the old man thought that a place should not look beautiful on a Sunday, but he looked shocked, and said " Beautiful ? I do not know about beautiful, but it is very old." I expect in that remark you have some indication of the lingering British prejudice which regards beauty as something immoral. Antiquity has its place, and that is why the archæologist, in spite of all his sins, moves about the country in comparative safety, but the lot of the man who denounces the ugliness or vulgarity of modern aberrations treads a dangerous and thorny part. I am very glad to see how completely unanimous are the opinions of hosts and guests to-night. A good many of us are concerned with education, and I rejoice very much that you have spoken so warmly of the provincial Schools of Architecture. We know there are great and flourishing schools of architecture in London. I had the good fortune for some years to see the work which Professor Reilly and Professor Adshead, both with us to-night, and Professor Abercrombie were doing in Liverpool, and similar work is being done in many other great cities. Newcastle, with its University School of Art, is working on similar lines. During the years, some of them rather distant years, when I lived in Athens there passed through the British School in Athens a succession of young architects, picked men who came there to gain inspiration and material which they could use in their professional life, and I think I can safely say that I have never come across a better type of man than those I met during my long period there, first as a student at Athens, then as a director, and later as a member of a governing body of the School. The quality has been steadily improving, and these men need not fear comparison with the men sent out, picked men in some cases, by other countries. It would be impossible to speak too highly of the gifted men who come to us from America, fortified as they are by a training in Paris in addition to the splendid training they have had at home. Then there are the men who came to us at Athens from Rome, some of whom are English scholars, and they are second to none. The work of men like Bradshaw is recognised all the world over. I should like to plead for an increase of any facilities for training of that kind. You cannot walk down an English street without seeing a console here, a lion's head there, and a piece of ornament on a lamp-post which have been derived from the few recorded excavations which were available at the end of the eighteenth century. There is plenty of detail which has come to light in Greece and the more recently excavated cities of Asia Minor, and British architecture has gained a lot from these and from other such discoveries in the cities of Ephesus, Miletus and Pirene. We rejoice in the interest you have shown in the buildings and the architectural development of Tyneside, and your interest has deepened our pride in our neighbourhood.

Mr. HARVEY CORBETT, responding to a demand for a speech, said : I have been greatly interested in the discussions which we have listened to at this Conference, the general question which is interesting us so much in the matter of town planning and the general improvement of our cities, and I would like to point out one or two developments which have occurred in the United States which might be of interest to the Institute here. The first thing that suggests itself to me is that the working architect is more recognised as a professional man than he used to be. Perhaps I am touching on a delicate subject in the matter of registration. But in the United States the architect is rapidly becoming a professional man of exactly the same legal standing as a doctor or a lawyer. In New York State it is required that each man shall qualify by means of a very rigid examination before he is permitted to use the word " architect." The result is that the profession has advanced in a remarkable degree. Then we have recently created in many of our cities and in some of our States what we call Fine Art Commissions, which have certain powers and jurisdictions over everything on which a State or city spends money. That means that we do not create from State or City funds some of the monumental monstrosities that we have created in the past, because the Commission has the power of a veto and thus helps the designer to do better things. I am pointing out these things to you simply to show that there is a spirit of quite hearty co-operation between the profession and the public at large and a growing interest on the part of the public in architectural matters and in the beautification of our cities. I am glad indeed to see that the same spirit is being shown here. In saying that I do not mean to say that I should not expect to find it here, but it is only recently that the public in general have taken this active interest in architectural matters, and if you are to accomplish anything along these lines it must be through the interest and co-operation of the public at large. I think our duty as a profession, both here and in America and in other countries, is to bring the public up to the standard that we set and which we would like them to follow.

A Résumé of the Proceedings

After the ever-memorable meeting at Oxford last year the Council of the Northern Architectural Association undertook a heavy task in inviting the architects of the Empire to their province. To challenge comparison with the beauty and interest of Oxford was a bold act. But the event has proved that their boldness was justified. The task was triumphantly carried through. The meeting at Newcastle and Durham has taken its place beside its four predecessors as a complete and delightful success.

The weather was perfect from start to finish. Every item in the programme had been admirably organised and the whole thing went with a swing from the start.

The number attending exceeded all reasonable expectations, and the muster of ladies who took part indicated the growing popularity of these annual gatherings.

The selection of the home of the Conference was a happy inspiration. For a week we were the owners of the Old Assembly Rooms in Westgate Road, a dignified and spacious suite of rooms that provided ample accommodation for all the events that centred there.

The smoking concert on the evening of arrival was informal, hearty, comfortable and entertaining. The ancient Northumbrian sword dances were a fascinating novelty to the outside visitors. As train after train brought up its contingent the gathering grew, until the beautiful hall was full of enthusiastic guests renewing old friendships and creating new ones.

The formal opening on the Thursday morning was a serious event. We had from Sir Theodore Morison, the accomplished principal of the Armstrong College and an Odysseus among educationists, a really admirable address, which provoked a lively and useful discussion. After lunch we divided. A fortunate band of seventy enjoyed the hospitality of the Tyne Improvement Commissioners on a steamer, which took us from the quayside down the Tyne to the sea, past the shipyards, factories and coal wharves of that great port. It was a sad and significant sight that brought home to the visitors the hard realities of commercial and industrial depression. At Tynemouth we went back a thousand years in inspecting the ruins of Tynemouth Priory, then drove along the sea and past Seaton Delaval to the Armstrong College, where we enjoyed tea, inspected the work of the local school of architecture, and listened to a practical speech by Mr. Maurice Webb on the status and future of the school. Here we joined the larger party, which had spent the afternoon in viewing the antiquities of Newcastle.

A rush back to our hotels, a hasty meal, and we were out at Jesmond Dene as the guests of the Lord Mayor and Corporation. Surely there is no city in the world whose municipality can entertain its visitors in such beautiful surroundings. The hall stands in a wonderful little park that was saved from the encroaching suburbs by Lord Armstrong, and after the reception by the Lord Mayor indoors, the guests wandered about the beautiful grounds to the sound of a military orchestra.

On Friday an early start was made by a special train to Durham, where the Mayor received us on behalf of the Corporation in the fine Town Hall, and showed us the ancient plate of the city. Then up to the Cathedral, where Professor Hamilton Thompson gave us a scholarly and detailed address on the history of the building, and divided us into parties of convenient size for a thorough inspection of the famous church. Then came lunch in one of the large halls of the University, where more than 200 of us were hospitably entertained by the President and Council of the Durham Colleges.

Next a group photograph of unprecedented size was taken in a suitable corner of the Castle grounds, and Mr. W. T. Jones, the immediate Past-President of the Northern Association and architect to the Castle, then took us over the buildings and gave us the benefit of his unequalled knowledge of its structure and history and his enthusiastic devotion to its beauties. So hot was the afternoon that tea in a shady garden in the Castle grounds was peculiarly welcome, and soon we were all trooping back to Newcastle by train or car to prepare for the banquet in the Old Assembly Rooms. The large ballroom of this fine building proved to be an ideal place for such a function as ours. It was comfortably filled by some 200 members and guests. The speeches were just right in number and length. We had with us a representative selection of the public men of the northern province, headed by the Lord Mayor of Newcastle, and the enthusiasm of the members of the Conference, which had been rising steadily for two days, came to a hearty climax at the close of one of the best public dinners that we can remember.

That was the end of our formal functions. On Saturday—the weather better and brighter than ever—two parties set out for long motor tours. One—small but enthusiastic—was conducted by Professor R. C. Bosanquet, the distinguished archæologist, to Hexham Abbey and the Roman Wall. The second—filling three large cars—were the guests of the Duke of Northumberland at Alnwick Castle, and of Lord Armstrong at Cragside. We hear that their tour was " absolute perfection."

Though Saturday ended our programme there was a delightful postscript on Sunday. Sir George and Lady Renwick kindly invited the members to visit their house at Newminster, and a dozen were able to take advantage of the opportunity. Sir George took them to Gray's House, showed them the Abbey, and, with Lady Renwick, entertained them at tea in the gardens of Newminster.

Our tale of gratitude is even heavier than usual this year. We have to thank the Lord Mayor of Newcastle-upon-Tyne and the Lady Mayoress for their gracious hospitality at Jesmond Dene, the Mayor and Corporation of Durham for their kind welcome at the Town Hall, the President and Council of the Durham Colleges for entertaining us so delightfully in the Castle, and Canon Ellersham in particular for presiding over the luncheon and lending us his delightful garden for our tea party. We are peculiarly indebted to those whose hospitality ensured the success of our distant tours—to his Grace the Duke of Northumberland, who gave us exceptional privileges at Alnwick Castle; to Lord and Lady Armstrong, who entertained us so cordially at Cragside; to the Tyne Improvement Commissioners, who provided the vessel which took our party down the river; to Professor R. C. Bosanquet, who took so much trouble to interest and instruct our " Roman Wall " party; to Sir George and Lady Renwick, for their hospitality at Newminster; and to Colonel Pollard, for kindly permitting our party to visit Seaton Delaval Hall.

We are indebted to others for very special services—to Sir Theodore Morison, who at a time of personal anxiety

exerted himself to prepare and give us his admirable address; to Professor Hamilton Thompson, for his wonderfully complete and illuminating discourse at Durham Cathedral; to Professor Hatton, of the Armstrong College, for lending us the Art School for our function on Thursday; and to the Committee of the "Pen and Palette Club," for opening their premises, with their suggestion of the Adelphi Terrace, to our members.

Lastly, but with no less sincerity, we have to thank our hosts, who devoted the hard work of many months to ensuring the complete success that rewarded their efforts. The Council and members of the Northern Architectural Association and the branch Chairmen and Committees spared no pains and shirked no labour. The two Presidents (for the work of preparation and execution included two terms of office)—Mr. W. T. Jones and Colonel G. T. Reavell—made it a labour of love, and both have reason to be personally proud of the result, which reflected equal credit on Newcastle and on Durham. The Special Committees, Mr. C. S. Errington in charge of the visits, Mr. Taylor in charge of hospitality, did flawless work, and Mr. Fenwicke threw his infectious enthusiasm into the musical arrangements.

But a special word must be said of Mr. MacKellar. Before the Conference he was only a name to most of our members. Those who came in touch with the arrangements knew how hard, how cheerfully, how systematically he was working for months beforehand. Only when the functions began did the members at large begin to realise how much they owed to the indefatigable, ubiquitous, skilful, cheerful personality of Norman MacKellar, who more than earned his place in our records as one of the best of organisers and the most energetic of workers.

I. M.

LIST OF MEMBERS ATTENDING THE CONFERENCE.

Among those present attending the Conference were the following :—

Mr. Rodney H. Alsop [*F.*], Mrs. Alsop, Mr. T. C. Agutter [*F.*], Mr. H. E. Ayris [*L.*] [Assist. Hon Secretary, Cumberland Branch N.A.A.], Mr. J. W. Argles, Mr. Sidney Ash [*F.*], Professor S. D. Adshead [*F.*], Mrs. Adshead, Miss Adshead, Mr. D. C. Allester, Mr. R. J. Archibald [*L.*], Mrs. Archibald, Mr. Richard M. Archibald, Mr. Fred G. Askew, Mr. James A. Arnott [*F.*], Major Harry Barnes [*F.*] [Vice-President, R.I.B.A.]. Mr. Herbert T. Buckland [*F.*], Miss Buckland, Mr. Robert Brown, Mr. Geo. J. Bell, Mr. Edwin C. Bell, Mr. Sidney F. Bestow [*A.*], Mr. Stanley Brinton, Mrs. Brinton, Mr. John W. Boyd [*L.*], Mrs. Boyd, Mr. Cyril C. Brown, Mr. Martin S. Briggs [*F.*], Mr. Percy L. Browne [*F.*], Mr. P. Lindsay Browne, Mr. R. G. Bell, Mr. John G. Burrell [*L.*], Mr. C. F. Burton [*F.*], Mr. F. G. Baker [Chief Clerk, R.I.B.A.], Mr. Geo. T. Brown [*A.*], Mr. Roy C. Blampied [*A.*], Mr. James T. Cackett [*F.*], Mrs. Cackett, Mr. G. E. Charlewood [*A.*], Mrs. Charlewood, Mr. Philip H. Cundall [*A.*], Mr. Chas. Cayley, Miss G. Childs, Mr. Cecil Clear, Mr. J. Coleman, Mr. Dale Cuthbertson, Mr. F. Austin Child [*A.*], Mrs. Child, Mr. Joshua Clayton, Mr. F. E. Coates [*A.*], Mrs. Coates, Mr. James F. H. Checkley, Mr. Harvey W. Corbett [*F.*], Mrs. Corbett, Mr. J. Gibson Cowe, Mrs. Cowe, Miss Cowe, Mr. James W. Corking, Mr. W. Leonard Dowton [*L.*], Capt. F. E. Dotchin, Mrs. Dotchin, Mr. J. M. Dingle [*L.*], Mr. F. M. Dryden [*L.*], Mrs. Dryden, Miss Dryden, Mr. R. F. Dodd [*A.*], Mr. H. A. Dickman [*A.*] [President, Nottingham and Derby Architectural Society], Mrs. Dickman, Mr. R. Burns Dick [*F.*], Mrs. Dick, Mr. E. Guy Dawber [*F.*] F.S.A. [President, R.I.B.A.]. Mrs. Dawber, Mr. D. Ditchburn [*L.*], Mr. T. E. Eccles [*F.*], Mr. Charles S. Errington [*F.*], Mrs. Errington, Mr. W. Elsworth, Mr. Percy J. Fay, Mr. Henry M. Fletcher [*F.*], Mr. R. C. Forster, Mr. W. E. Fenwicke, Mr. L. H. Fewster, Mr. Kenneth Glover [*F.*], Mrs. Glover, Mr. H. B. S. Gibbs [*A.*] [Hon. Secretary, Sheffield, South Yorkshire and District Society of Architects and Surveyors], Mr. John P. Grant [*F.*], Mrs. Grant, Mr. A. W. Groves, Mr. J. T. Graham, Mr. John Gibson, Mr. Geo. H. Gray [*A.*] [Hon. Secretary, Northern Architectural Association], Mrs. Gray, Mr. A. H. Gillison, Mr. M. K. Glass [*F.*], Mr. C. I. Greenhow [*L.*], Mr. G. Hastwell Grayson [*F.*], Mr. Alfred Golding, Mr. J. Wilson Hays [*F.*], Mrs. Hays, Mr. W. J. Hale [*F.*], Mrs. Hale, Mr. R. Hardy-Syms [*L.*], Mr. R. G. Hammond [*F.*], Mr. F. Hammond, Mr. E. Stanley Hall [*F.*] [Hon. Secretary, R.I.B.A.], Mr. H. L. Honeyman [*A.*], Mr. A. G. Henderson [*A.*], Mr. Wilfrid Hall, Mr. Thomas Harrison [*F.*], Mrs. Harrison, Mr. Arthur Harrison [Hon. Secretary, Tees-side Branch, Northern A.A.], Col. E. J. Hart, Mr. C. A. Harding [*A.*], Miss Dulcie Hardisty, Mr. R. Harrison, Miss G. M. Hindley, Mr. F. C. S. Harrison, Mr. F. Howard, Mr. C. W. Hall, Mrs. Hall, Mr. Ivor P. Jones [*A.*] [Hon. Secretary, South Wales Institute of Architects], Mrs. Jones, Mr. P. L. Jones, Mr. W. H. Johnson [*L.*], Mr. A. W. Johnston, Mr. S. W. B. Jack, Mr. H. E. Jarvis [*A.*], Mr. W. T. Jones [*F.*] F.S.A., Mrs. Jones, Miss V. T. Jones, Mr. Walter Johnston, Mr. A. M. Jenkins, Mr. Arthur Keen [*F.*] [Vice-President, R.I.B.A.], Mrs. Keen, Mr. John Keppie, A.R.S.A. [*F.*] [President, Incorporation of Architects in Scotland], Mr. H. J. Kerr, Mr. Stewart Kaye [*A.*], Mrs. Kaye, Mr. Harold S. Knopp [*L.*], Mr. R. Ridley Kitching [*F.*], Mrs. Kitching, Mr. Robert Kyle, Mr. H. W. Kaye, Mr. Kilpin, Mr. R. G. Kirkby [*F.*], Mrs. Kirkby, Mr. T. Alwyn Lloyd [*F.*] [Chairman, Central Area, South Wales Institute of Architects], Mr. J. A. E. Lofthouse [*F.*], Mrs. Lofthouse, Mr. F. J. Lamb, Mr. A. J. Lamb, Mr. T. Ashton Lofthouse [*F.*], Mr. Simpson Low [*A.*], Mr. Edwin M. Lawson [*A.*], Mrs. Lawson, Mr. P. H. Lawson [*A.*], Mr. P. R. McLaren [*L.*], Mrs. McLaren, Mr. J. C. Maxwell [*A.*], Mrs. Maxwell, Mr. R. Mauchlen, Mrs. Mauchlen, Mr. John Moffitt, Mr. A. Milburn, Mrs. Milburn, Mr. T. Morrison, Mr. S. C. McClure [*L.*], Mr. Ian MacAlister [Secretary, R.I.B.A.], Mrs. MacAlister, Mr. W. J. McWilliams [*F.*], Mr. C. S. Madeley [*A.*], Mr. F. H. Mansford [*L.*], Mrs. Mansford, Mr. J. Inch Morrison [*L.*] [President, Edinburgh Architectural Association], Mrs. Morrison, Mr. R. Norman MacKellar [*A.*], Mrs. MacKellar, Mr. Thomas R. Milburn [*F.*] [Vice-President, R.I.B.A.], Mrs. Milburn, Miss Milburn, Mr. W. Milburn [*F.*] O.B.E., J.P., Mr. W. Milburn, Jun. [*A.*], Dr. K. V. Milburn, Mr. W. Hayward Morris, Mr. J. H. Martindale [*F.*], Mrs. Martindale, Mr. Eric Mitchell, Mr. Chas. T. Marshall [*F.*], Mrs. Marshall, Mr. C. B. Marshall [*L.*], Mr. A. Marshall [*L.*], Mrs. Marshall, Mr. E. R. Newbigin, Mr. C. F. Newcombe [*A.*], Mr. P. Clive Newcombe, Mr. J. Landell Nicholson, Mrs. Nicholson, Mr. E. Nixon, Mr. G. Dale Oliver [*R.F.*] [Chairman, Cumberland Branch, Northern Architectural Association], Miss M. E. Osman, Mr. Harold Oswald, Mrs. Oswald, Mr. Edmund Oakley, Mr. H. D. Pritchett [*L.*], Mr. G. R. Purdy, Mrs. Purdy, Mr. W. T. Plume [*Hon. A.*], Mr. A. N. Prentice [*F.*], Mr. R. G. Pearson, Mr. T. W. T. Richardson [*F.*] [Chairman, Tees-side Branch, [Northern Architectural Association], Professor C. H. Reilly [*F.*], O.B.E., Mrs. Rogerson, Mr. H. S. Rogers [*F.*], F.S.A. [President of the Berks, Bucks and Oxon Architectural Association], Mr. Norman Richley [*F.*], Mrs. Richley, Lt.-Col. G. Reavell, [*F.*], O.B.E. [President, Northern Architectural Association], Mrs. Reavell, Miss Reavell, Mr. J. P. Rudd, Professor A. E. Richardson [*F.*], F.S.A., Mrs. Richardson, Mr. Ernest Robson, Mrs. Robson, Mr. Norman Ramsay, Mr. E. Richardson, Mr. Thomas Rae, Mr. P. A. Robson [*F.*], Mr. John Reid, Mrs. Reid, Professor J. A. E. Steggall [*Hon. A.*], Mr. G. P. Stainsby [*A.*], Mr. A. Dunbar Smith [*F.*], Mrs. Smith, Mr. John Sanderson, Mr. W. Auger Smith [*L.*],

Mr. Ralph R. Shipley [*L.*], Mrs. Shipley, Miss Shipley, Mr. James E. Shaw, Mrs. Shaw, Miss Shaw, Mr. C. B. Stewart [*A.*], Mrs. Stewart, Mr. W. N. Scaife [*L.*], Mr. Allan Smith, Mrs. Smith, Mr. Jas. Scott, Mrs. J. Scott, Mr. T. Taylor Scott [*F.*], Mr. T. Sharpe [*A.*], Mrs. Sharpe, Mr. W. Steel, Mr. P. J. Stienlet [*L.*], Mrs. Stienlet, Mr. Joseph Spain [*F.*], Mrs. Spain, Mr. F. Scott, Mr. Percy Thomas [*F.*], O.B.E., Mr. O. M. Thorp [*L.*], Mr. Harry Teather [*F.*], Mrs. Teather, Miss Teather. Mr. Laurence W. Taylor, Mr. T. S. Tait [*A.*], Mrs. Tait, Mr. A. K. Tasker [*F.*], Mr. C. P. Tanner [*A.*], Mrs. Tanner, Mr. F. W. Turnbull, Mr. Wilfrid Usher, Miss J. Usher, Mr. James R. Wigfull [*F.*], Mr. Wm. Woodward [*F.*], Mr. Maurice E. Webb, D.S.O., M.C. [*F.*], Mr. Wray Wheston [*L.*], Mrs. Wheston, Mr. Henry A. Wilson [*A.*], Mrs. Wilson, Mr. A. E. Wigfield, Mr. J. A. Williamson [*A.*], Miss Williamson, Mr. Horace Wilson, Miss Wilson, Mr. Chas. Walker, Mr. John Woollatt [*A.*], Mr. C. E. Westmoreland, Rev. H. L. Whitley, Mr. Chas. F. Ward [*F.*] [President of the South Wales Institute of Architects], Mrs. Ward, Mr. N. Willis, Mr. F. N. Weightman [*L.*], Mr. G. Whitfield, Mr. Thomas C. Yates [*A.*].

SCIENCE STANDING COMMITTEE.

Condition of Imported Soft Woods.

Mr. C. A. Daubney [*F.*], having drawn the attention of this Committee to the condition of timber imported into London and the serious risk of its infection by dry-rot whilst awaiting sale, a party of members visited the docks by permission and inspected timber from various countries, more particularly soft woods. Upon making their report the Council recommended that a deputation should seek an interview with the Port of London Authority, and this was accomplished in the early part of the year. The members, including Messrs. Vernon Crompton, H. D. Searles-Wood, R. J. Angel and J. Ernest Franck, were courteously received. Their statements and recommendations were fully appreciated and assurance given that careful consideration would be given to means for amending existing conditions. It is gratifying to learn also that the "Imperial Institute Timber Committee," of which Mr. H. D. Searles-Wood [*F.*] is Chairman, has been induced to move in the matter, and it is hoped that as a result of these efforts, conditions for the storage of timber in the docks will be improved materially, and it is the intention of the Committee to keep the matter under observation.

Allied Societies and Building Research.

During this Session the Science Standing Committee has put itself into communication with the Allied Societies of the R.I.B.A. with a view to encouraging throughout the Empire some measure of co-operation in research work. Sixteen societies have been approached and an explanatory memorandum circulated indicating such subjects as :—

(1) The Preservation of Timber.
(2) The Preservation of Stone.
(3) The Preservation of Metal.
(4) Improvement of Glass for Pavement Lights.
(5) Improvement of Painting (Internal and External).
(6) Acoustics—in public and private buildings, factories, etc.
(7) Drainage—bye-laws.
(8) Regulations as to lead mains by water companies.
(9) Jointless floorings, etc., and their composition.

To the above may be added the subject of the "Natural Lighting of Buildings," following upon the valuable paper by Mr. Percy Waldram [*L.*] on 22 April last.

The Past President of the Berks, Bucks and Oxon Architectural Association, Mr. Edward Warren, F.S.A., has offered to furnish notes upon the preservation of stone.

Professor C. H. Bulleid, of Nottingham University, offers his services, and professors of the Universities of Leeds, Sheffield, and of Armstrong College, Newcastle, are willing to undertake investigations on particular subjects, provided funds are furnished.

It is hoped that this effort may be extended and that, by decentralising and widening the field of investigation into common problems, recruits may be secured and an extended interest aroused in many directions.

Francis Hooper,
Joint Hon. Secretary, Science Standing Committee.
3 *June* 1925.

PROPOSED "R.I.B.A. TRAVELLING STUDENTSHIP" TO MESOPOTAMIA.

The Excavations at Ur.

The following letter has been received by the Secretary of the Institute :—

Dear Mr. MacAlister,—I have been very much interested in what you tell me about the work which Mr. Leonard Woolley hopes to do at Ur, in the course of the coming winter. He appears to have in immediate prospect a piece of excavation which promises results of the greatest interest and importance, not only to archæologists and historians, but to architects and historians of architecture. The fascinating possibilities that are opened up by the exploration of what may turn out to be the Royal Palace of Ur ought to excite the enthusiastic interest of all who are concerned with the early history of our Art.

I understand that it will be of the greatest help to Mr. Woolley if he can be accompanied by a well-trained young architect to assist him on the technical side of the work. The sad loss of Mr. Francis Newton created a vacancy which it is the duty of the architectural profession to fill. I understand also that you have found an enthusiastic young architect with the necessary qualifications who is prepared to go out in the coming winter as Mr. Woolley's architectural assistant if the necessary funds can be provided.

I am anxious to help in this matter, and I should like to offer the sum of 40 guineas as the nucleus of a fund for providing the required sum of £400 which will enable the R.I.B.A. to send out this young architect as an "R.I.B.A. Travelling Student" to Mesopotamia.* I hope you will have no difficulty in obtaining other contributions which will rapidly provide the full amount required.—Yours very truly, Halstead Best [*F.*].

St. John's Chambers, 87, Church Street,
Blackpool, 8 *June* 1925.

The following contributions have already been received :—

Halstead Best [*F.*]	£42	0	0
Sir John J. Burnet, R.A. [*F.*]	5	5	0
Messrs. William and T. R. Milburn [*FF.*]	3	3	0
Mr. Herbert Baker, A.R.A. [*F.*]	3	3	0
Mr. E. Stanley Hall [*F.*]	2	2	0
Mr. Edward P. Warren, F.S.A. [*F.*]	1	1	0
Sir G. Oatley and G. C. Lawrence	2	2	0
Mr. H. S. Chorley	1	1	0
Mr. S. Segar Owen	1	1	0

* The Council of the Institute have approved of this Travelling Studentship, contributions to which will be gladly received by the Secretary.

USE OF THE TERM "CHARTERED ARCHITECT."

Many enquiries have been received from Members as to the use of the term "Chartered Architect" in connection with other descriptions such as Surveyor, Valuer, etc., and in cases where not all the partners of a firm of Architects are entitled to use the description "Chartered Architect."

The Council of the R.I.B.A. have decided that the description "Chartered Architect" may only be used in direct connection with the name of the member who is the Chartered Architect; and that where it is used in connection with other descriptions, such as Surveyor, Valuer, etc., it should be used in the following way:—

(*a*) John Brown, F.R.I.B.A.,
Chartered Architect,
Surveyor.

(*b*) Messrs. Jones and Robinson,
Architects,
Surveyors,
Valuers.

John Jones, F.R.I.B.A., Chartered Architect.
William Robinson, F.S.I., Chartered Surveyor.
Henry Thompson.

NOTES FROM THE MINUTES OF THE COUNCIL MEETING.

22 *June*, 1925.

The Excavations at Ur.

A letter from Mr. Halstead Best [*F.*] containing the offer of a sum of 40 guineas as the nucleus of a fund which would enable a well-trained young Architect to accompany Mr. Leonard Woolley and to assist him in his excavations at Ur was received and ordered to be published in the Journal.

Sir George Oatley.

The Secretary was directed to convey the congratulations of the Council to Sir George Oatley [*F.*] on the occasion of his Knighthood.

Housing in Holland.

A report was received from Mr. T. Alwyn Lloyd [*F.*], the R.I.B.A. Delegate who accompanied the official visit of the National Housing and Town Planning Council to Holland during Easter, 1925, and was ordered to be published in the Journal.

Notices

ELECTION OF MEMBERS, 30 NOVEMBER 1925.

Associates who are eligible and desirous of transferring to the Fellowship class are reminded that if they wish to take advantage of the election to take place on 30 November 1925 they should send the necessary nomination forms to the Secretary R.I.B.A. not later than 3 October.

LICENTIATES AND THE FELLOWSHIP

The attention of Licentiates is called to the provisions of Section iv, clause 4 (b) and (c ii) of the Supplemental Charter of 1925. Licentiates who are eligible and desirous of transferring to the Fellowship can obtain full particulars on application to the Secretary R.I.B.A. stating the clause under which they propose to apply for nomination.

R.I.B.A. KALENDAR 1925-26.

The Kalendar for the coming session is now in course of preparation, and changes of address, etc., should be notified to the Secretary R.I.B.A., 9 Conduit Street, W.1, before 5 September.

THE EXAMINATIONS.

The Intermediate Examination, qualifying for registration as Student R.I.B.A., was held in London and Leeds from 22nd to 28th May. Of the 83 candidates who presented themselves, 42 passed and 41 were relegated. The successful candidates were as follows, the names being given in order of merit as placed by the examiners:

Galbraith: Thomas McKay [*P.*, 1923], "Gordon House," Holden Road, Wednesbury, Staffs.

Long: Albert Edward [*P.*, 1923], 28, Bickersteth Road, Tooting, S.W.17.

Greenwood: Fred. [*P.*, 1922], 255, Brunswick Street, Nelson.

Ecclestone: James Henry [*P.*, 1923], "Westwood," Port View, Saltash, Cornwall.

Cohen: Jacob [*P.*, 1922], 33, White Lion Street, Norton Folgate, E.1.

Greenwood: Harold [*P.*, 1923], 40, St. John's Road, Golder's Green, N.W.11.

Hall: Frederick George Alfred [*P.*, 1923], 108, Hambolt Road, Clapham Park, S.W.4.

Thompson: Gerald Leopold [*P.*, 1921], Durlstone Manor Hotel, Denmark Hill, S.E.5.

Orfeur: Ronald Francis [*P.*, 1924], 30, Guessens Road, Welwyn Garden City, Herts.

Ward: William Leslie [*P.*, 1920], "The Firs," The Mount, Ewell, Surrey.

Lee: John William [*P.*, 1923], 15, Christopher Street, Burley Road, Leeds.

Parkes: Frederick Ernest [*P.*, 1923], "Stoneridge," Quinton, Birmingham.

Troke: Walter Edmund [*P.*, 1921], "Fairlight," 31, Malmesbury Road, Southampton.

Tassell: George Edward [*P.*, 1922], Almaville, Tillington, Stafford.

Goodall: Albert Edward James [*P.*, 1921], 61, Chesterfield Gardens, Harringay, N.4.

Bowring: Charles Clifford [*P.*, 1923], 102, Walbrook Road, Derby.

Stott: James Frederick [*P.*, 1923], 18, York Avenue, Oldham.

Ayerst: Charles Thomas [*P.*, 1923], 79, Hallam Street, Portland Place, W.1.

Brown: Robert Neville [*P.*, 1922], Aubrey House, Harton, South Shields.

Buckingham: Geoffrey Sambrooke [*P.*, 1923], 44, Mile End Road, Norwich.

CADMAN : HARRY GEORGE [*P.*, 1923], " Windy-Ridge," Creve Road West, Folkestone.

CHECKLEY : JAMES FREDERICK HAYSELDEN [*P.*, 1920], Trafford House, Station Road, Benton, Northumberland.

CLARK : JOHN HUNTER [*P.*, 1918], 3, Walton Crescent, Chesterfield.

DUNN : RICHARD RUSSELL ANTHONY [*P.*, 1921], 10, Frederick Street, Sunderland.

EVANS-VAUGHAN : GEORGE FREDERICK [*P.*, 1922], 4, Dales Road, Ipswich.

GALE : JACK ELFSTROM [*P.*, 1921], 7, St. Oswalds Road, Small Heath, Birmingham.

HARRISON : GEOFFREY STANLEY [*P.*, 1923], Thurlow, Aldenham Avenue, Radlett, Herts.

HARTLEY : WILLIAM DAVID [*P.*, 1920], " Sunnyside," Wexham, Slough.

HUNT : VINCENT COLLINGWOOD [*P.*, 1921], " Redcot," The Manor Way, Blackheath, S.E.3.

JOPLING : EDWARD LAURENCE [*P.*, 1920], c/o, 6, Grey Street, Hull.

LIDDLE : EDWIN JOSEPH [*P.*, 1920], 30, Osborne Road, Stroud Green, N.4.

LYON : NEVILLE ARTHUR [*P.*, 1920], 46, Dover Street, Piccadilly, W.

MOUNT : EDWARD CYRIL [*P.*, 1923], 61, Stoughton Drive North, Leicester.

PAYTON : ARTHUR GEORGE REDVERS [*P.*, 1921], " The Dell," Sharmans Cross Road, Solihull, Birmingham.

RUSHWORTH : STEPHEN HUDSON [*P.*, 1919], 34, Tilbury Mount, Elland Road, Leeds.

SCHOFIELD : JAMES ARTHUR [*P.*, 1922], 31, Kendall Road, Beckenham, Kent.

SHAW : THOMAS REGINALD [*P.*, 1922], 47, Rider Road, Leeds.

SKURRAY : THOMAS EDWARD DEANE [*P.* 1924], Caversham Bridge Hotel, Reading.

SLADE : ARTHUR [*P.*, 1921], 34, Doria Road, Parsons Green, S.W.6.

WHINNEY : HUMPHREY CHARLES DICKENS [*P.*, 1921], 8, Old Jewry, E.C.2.

WILKIE : DAVID ARCHIBALD [*P.*, 1923], 4, Montrose Villas, Hammersmith Terrace, W.6.

WOOD : NEVILLE BLACKWELL [*P.*, 1921], 114, Arthur Street, Derby.

Competitions

SEVENOAKS U.D.C. HOUSING COMPETITION.

Members of the Royal Institute of British Architects must not take part in the above Competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

PROPOSED FIRE AND POLICE STATION, NEWCASTLE-UPON-TYNE.

Premiums £500, £300 and £100 respectively are offered. Assessor Mr. Percy S. Worthington, F.R.I.B.A. Conditions may be obtained on or before 4 July 1925 by depositing £2 2s. Designs to be sent in not later than 8 October 1925. Apply A. M. Oliver, Town Clerk, Town Hall, Newcastle-upon-Tyne.

COVENTRY HOSPITAL COMPETITION.

The Competitions Committee desire to call the attention of Members to the fact that the Conditions of the above Competition are not in accordance with the Regulations of the R.I.B.A. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime Members are advised to take no part in the competition.

WOLVERHAMPTON AND STAFFORDSHIRE HOSPITAL.

Proposed out-patient and casualty department, to be erected in Cleveland Road, Wolverhampton. Assessor, Mr. T. R. Milburn, F.R.I.B.A. Premiums £200, £150 and £100. Last day for questions, June 27th. Designs to be sent in not later than September 5th, 1925. Conditions obtainable by depositing £1 1s.

GOWER R.D.C. HOUSING COMPETITION.

Members of the Royal Institute of British Architects must not take part in the above Competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

COMPETITION FOR A HIGH BRIDGE OVER COPENHAGEN HARBOUR.

Copenhagen Municipality hereby invite participation in an International Competition in connection with a High Bridge over Copenhagen Harbour.

The Municipality have set apart a sum of 35,000 kroner to be expended in prizes. There will be three prizes, the value of which will be fixed by a Judgment Committee consisting of Members of the Council, together with technicians chosen by the Municipality, the (Danish) Institute of Civil Engineers and the (Danish) Society of Architects. The largest prize will be at least 15,000 kroner.

Programme and particulars in Danish and English can be procured after 1 February 1925, from the City Engineer's Office, Town Hall, Copenhagen B, against a deposit of kr. 100.

The deposit is repayable after the judging, or previously if the drawings, particulars, etc., are returned in good condition. Projects to be delivered to the City Engineers Directorate, Town Hall, before mid-day, 1 September 1925.

After judgment the competing projects will be publicly exhibited at the Town Hall, Copenhagen.

LEAGUE OF NATIONS.

COMPETITION FOR THE SELECTION OF A PLAN WITH A VIEW TO THE CONSTRUCTION OF A CONFERENCE HALL FOR THE LEAGUE OF NATIONS AT GENEVA.

The League of Nations will shortly hold a competition for the selection of a plan with a view to the construction of a Conference Hall at Geneva. The competition will be open to architects who are nationals of States Members of the League of Nations.

An International Jury consisting of well-known architects will examine the plans submitted and decide their order of merit.

A sum of 100,000 Swiss francs will be placed at the disposal of the Jury to be divided among the architects submitting the best plans.

A programme of the Competition when ready will be despatched from Geneva, and Governments and competitors will receive their copies at the same time. Copies for distant countries will be despatched first.

The British Government will receive a certain number of free copies. These will be deposited at the Royal Institute of British Architects, and application should be made to the Secretary, R.I.B.A., 9, Conduit Street, W.1, by intending competitors.

Single copies can be procured direct from The Secretary-General of the League of Nations at Geneva, for the sum of 20 Swiss francs, payable in advance, but will not be forwarded until after the Government copies have been despatched.

On the nomination of the President of the Royal Institute, Sir John Burnet, A.R.A., has been appointed as the British representative on the Jury of assessors.

THE NEW INSTITUTE FOR THE BLIND, BUENOS AIRES, ARGENTINE REPUBLIC.

An International Competition has been promoted for the Argentine Institution for the Blind, Buenos Aires, Argentine Republic.

A small number of copies of the Conditions have been deposited in the R.I.B.A. Library for the information of British Architects who may desire to compete.

A booklet containing the full text of the conditions with other information (translated from the Spanish) and a plan of the ground on which the Institution is to be erected is available for inspection at the Department of Overseas Trade (Room 42), 35 Old Queen Street, London, S.W.1.

Members' Column

MESSRS. DIXON AND QUICK.

Mr. R. S. Dixon, B.Arch. (Liverpool), and Mr. N. D. Quick, A.R.I.B.A., have opened an office at 25 High Street, Guildford, where they will practise under the style of Messrs. Dixon & Quick, Architects.

MESSRS. ROBERTSON & WHITESIDE.

Mr. J. D. Robertson, L.R.I.B.A., has taken into partnership Mr. W. J. Whiteside, A.R.I.B.A., A.I.Struct.E., and the firm will carry on practice as Robertson & Whiteside, chartered architects, Main Street, Bulawayo, S. Rhodesia.

MR. A. C. DENNY [*A.*].

Mr. A. C. Denny, A.R.I.B.A., late of Denny and Blain, architects, Glasgow and Dumbarton, has opened an office at Constitutional Buildings, East Grinstead, Sussex. Telephone: 289 East Grinstead.

FOR SALE.

A Mangle Gear Copper Plate Press as designed by Messrs. John Haddon & Co. for the Painter-Etchers' Exhibition.

The plank is 48 inches by 22 inches, and is low, so that the print can be easily lifted from the end, and is fitted with special stops (which cannot damage the roller) to prevent it falling out.

The rollers are 22 inches long and fitted with oil ledges to prevent the oil reaching the blanket. Will print plates up to 32 inches by 21 inches.

Makers' present price, £80. Nearest offer. Apply to K. Dalgliesh, Temple Chambers, Temple Avenue, E.C.4.

COLLABORATOR WANTED.

Associate with exceptional first class West End re-building schemes would like to meet another able to influence finance with view to collaboration or partnership.—Reply Box 2428, c/o The Secretary R.I.B.A., 9, Conduit Street, W.

COMMENCEMENT OF PRACTICE.

Mr. William W. Wood, A.R.I.B.A., has commenced practice at 102, Great Russell Street, London, W.C.1, where he will be glad to receive trade catalogues. Telephone: Museum 9527.

OFFICE ACCOMMODATION.

A.R.I.B.A. commencing practice would be glad to share his large, airy, well-furnished and well-lit office in W.C.1 district with another. Rent, including heating, lighting, cleaning and use of telephone, £75 per annum.—Apply Box 2665, c/o The Secretary R.I.B.A., 9, Conduit Street, London, W.1.

Associate would be glad to hear from another member who is desirous of sharing offices in Charing Cross district.—Reply Box 3960, c/o Secretary, R.I.B.A., 9, Conduit Street, W.

PRACTICE FOR SALE.

Practice, established, in rapidly growing seaside resort, excellent modern offices, leading thoroughfare, suit young Associate. Good reasons for disposal.—Box 1965, c/o The Secretary R.I.B.A., 9, Conduit Street, London, W.1.

CHANGE OF TELEPHONE NUMBER.

Mr. D. B. Niven's and Mr. H. H. Wigglesworth's telephone numbers are Museum 3943 and 3944, and not Museum 1733 as previously.

ASSISTANT WANTED.

Architectural Assistant. Capable and experienced Assistant wanted.—Apply in writing, giving qualifications and salary, to Thomas Worthington & Sons, 178, Oxford Road, Manchester.

APPOINTMENTS WANTED.

A lady (A.R.I.B.A.) seeks a position as Assistant in an architect's office. Would also be willing to undertake secretarial work.—Apply Box 1725, c/o The Secretary R.I.B.A., 9, Conduit Street, London, W.1.

Architect's Assistant, disengaged, experienced in the preparation of working drawings, details, etc. (domestic and ecclesiastical), surveying old buildings, levelling, draft specifications, etc., with good general office routine.—Reply Box 8023, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

Architect's Assistant renders professional assistance to architects in spare time or would accept regular employment.—Reply Box 4491, c/o The Secretary R.I.B.A., 9 Conduit Street, W.1.

Young F.R.I.B.A. with world-wide experience would be prepared to enter into partnership with progressive firm or another architect, or would offer assistance in own office in London. Reply Box 873, c/o The Secretary R.I.B.A., 9 Conduit Street, W.1.

A.R.I.B.A. is prepared to assist in the preparation of sketch plans, working drawings, details, and Specifications at own office (W.C.2).—Reply Box 2296, c/o Secretary, R.I.B.A., 9, Conduit Street, W.1.

PARTNERSHIP WANTED.

A.R.I.B.A., with use of West End office and phone, which would remain available, desires partnership in well-established practice in or near London. Trained in recognised Architectural School and has had wide office experience in London and the provinces. Would invest capital if prospects were sufficiently good. Testimonials.—Box 9263, c/o Secretary, R.I.B.A., 9, Conduit Street, London, W.1.

TO LET.

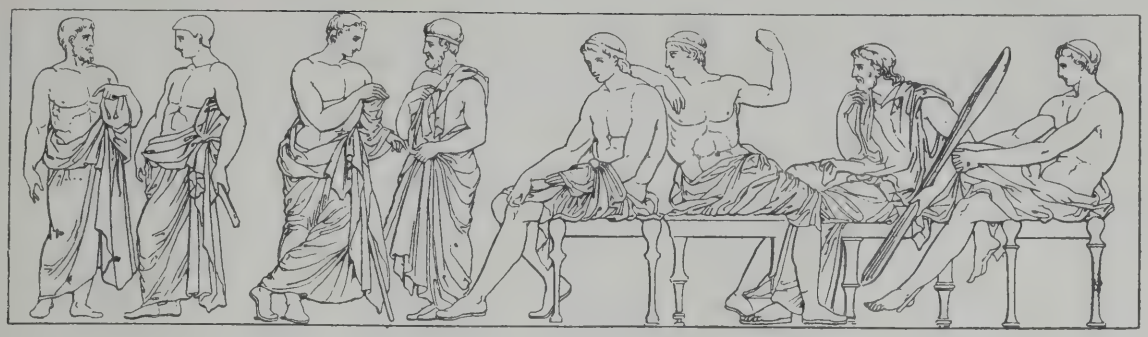
Two bright offices at 17 Dartmouth Street, Westminster. £150 a year.—Apply Box 9230, c/o The Secretary R.I.B.A., 9 Conduit Street, W.1.

R.I.B.A. TELEPHONE NUMBERS.

Members are requested to note that the R.I.B.A. Telephone Exchange lines are now "Mayfair," 434 and 435. The use of the line number "Mayfair, 6543" has been discontinued.

BRITISH ARCHITECTS' CONFERENCE.

Copies of the group photograph taken at Durham Castle can be obtained, price 6s. 6d. each, post free, on application to Messrs. Philipson and Son, Ltd., 20 Oxford Street, Newcastle-on-Tyne.



The Late Giacomo Boni

By The Rt. Hon. Sir RENNELL RODD, G.C.B., H.M.'s Ambassador to the Court of Italy, 1908-1919

THE Italian people, to the formation of which two essential strains, the Latin and the Lombard, have mainly contributed, has produced a number of pure idealists from St. Francis to Mazzini, and perhaps still more numerous examples of the calculating and logical mentality of which Machiavelli is the archetype. But the nation generally would seem to be the issue of a marriage between the two elements exhibiting the material Latin spirit redeemed by impulses of idealism. In Giacomo Boni the ideal characteristic predominated. He was a dreamer, but his imagination was tempered by profound knowledge and disciplined by conscientious labour. He set out on the adventure of life with few advantages. The love of his native Venetia, with its wealth of natural beauty, its great historic and artistic traditions, inspired a career which he had intended to devote to architecture, but which a scholar's enthusiasm diverted to archæological research. His mind had responded instinctively to the call of Ruskin, whose impassioned appeal from the materialism of industrial ethics to the gospel of sincerity and beauty was stirring new currents of thought in his student days. He was born in 1859. Training for a degree in the higher school of architecture in Italy did not demand any special knowledge of Latin or Greek, still less of English, to the study of all of which Boni applied himself with intensive industry, sacrificing sleep to the acquisition of knowledge and working obliviously of time till dawn replaced the single candle which he allowed himself.

English, which he first learned for Ruskin's sake, opened up to him new fields for exploration. He used to lament to me the disabilities under which Italian students suffered in not being able to obtain English books owing to their prohibitive price. The foreign text-books on learned subjects available in Italy were almost exclusively German. These were thorough and solid, but their compilers lacked the imaginative and suggestive qualities of the better English authors, who contributed something more than dogmatic deductions from the tabulation of data. He had himself, he said, owed a great deal to English writers and regretted that they were not more widely read in Italy.

It was as a controversial critic of the processes followed in the restoration of the Ducal Palace at Venice that he first attracted public attention and incurred the hostility of a well-intrenched official tradition. It was greatly to the credit of Signor Crispi's government that Boni, without interest or protection, should have been selected on account of the combination of knowledge and intuition which his articles displayed for various public services of archæological or historic importance. These he carried out with such discernment and ability that he was placed, before he was forty years old, in charge of the exploration of the Roman Forum, which had till then only been superficially cleared.

At the end of the last and the beginning of the present century a series of remarkable excavations proved him to be an archæologist of genius. The discovery of the Black Stone in front of the Curia, under the road which had been carried through the Arch of Severus for Charles V to make a triumphal entry into the Capitol, was, no doubt, the most sensational of these, inasmuch as every probability indicated that the broken monuments which it covered were those of the founders of the city. Scarcely less interesting were the successive revelations of the fountain of Juturna, the area of the Vestals, the altar in front of the temple to Divus Julius, and the early Christian church built at the foot of the ascent into the Palatine over which a church of the late baroque period had been constructed on a much higher level. The graves of the prehistoric cemetery found near the Regia supplied him with important evidence regarding the primitive population of the hills and

a clue which confirmed the traditional date of the foundation of the city. The reappearance of the Lacus Curtius under the mound which supported the column of Phocas confounded the sceptic, and a shaft sunk beside it revealed some seventeen different levels of the Comitium.

My intimacy with Boni dated from the period when the first of these dramatic discoveries had made him famous and the other excavations were still in progress or only contemplated. It was interesting to observe the process of his mind. His synthetic intelligence pieced together every topographical reference, obvious or obscure, in later writers and all the mass of classical literature which he had absorbed. Instinctively sifting the evidence with a sure diagnosis of what was to be accepted or rejected, he seemed almost unerringly to be able to lay his fingers on the spot where, if constructions of later epochs had not destroyed all traces, the remnants of earlier monuments would be found. Wandering with him over this haunted ground while he dreamily talked as if thinking aloud, with frequent quotation from unfamiliar texts and deviations into many byways, meditating on the ritual use of the hemlock stalk or the mystic significance of the labyrinth, you grew to understand the methods by which he established his conclusions.

When the Palatine area was added to his sphere of activity, new opportunities awaited him. He was obsessed with the ambition to discover the *Mundus* which played so important a part in the ceremonial observances of the priest-kings and the early republic. The cry of awe which rang through the primitive city on the appointed day when once in the year the Pontifex Maximus descended through a shaft or tunnel in the rock to hold communion with the unseen powers below, the cry of *Mundus patet*, haunted him. The fabled entrance to the nether world would, he had convinced himself, be found on the highest point of the Palatine hill. But everywhere building had been superimposed on earlier building, and the natural summit could no longer be identified. Boni therefore caused a number of pits to be sunk through accumulated earth and *débris* down to the original rock. He ascertained that the highest level had been under the platform and apse where the imperial throne stood in the Flavian palace. And there, precisely where he had divined its presence, once again after some two thousand years, *Mundus patuit*. Fragments of what appeared to have a circular stone cover of the shaft were also exposed. It was my privilege to descend with him by a series of ladders into the heart of the rock and to explore the lateral passages leading to chambers where the ritual grain for the new sowing and emblems of primitive cults were desposited.

In due course he transferred his residence to the little pavilion on the Palatine, above what, thirty or forty years earlier, served as the public entrance, and living in austere simplicity among his ruins, he seemed like a solitary survival of the genius of ancient Rome. There he indulged his love of plants and flowers, reconstituting the old neglected Farnese garden, and propagating every species of herb and tree associated with classical tradition. Nor was his genial influence restricted to the Palatine. Mindful that "God Almighty first planted a garden," he was concerned to beautify with the appropriate flora the sites where the ravages of medieval builders or the pick and spade of the excavator had left only unsightly cores of concrete. The Appian road has its cypress avenues once more, and the iris and the rose and wistaria which he planted in the forum will keep his memory green. Boni's advice was enlisted to solve the problem of rebuilding the Tower of St. Mark at Venice, and out of his own modest resources he contributed several consignments of the famous pozzolana earth which made the Roman mortar stronger than the bricks which it cemented.

That he was a genius among archæologists will not be contested. He has, however, been criticised for having failed adequately to co-ordinate and classify the immense amount of material which must have accumulated in his hands. Certainly he produced no scientific report of his work on the Forum and the Palatine to compare with the monumental record of Sir Arthur Evans on his discoveries at Knossos, though he published a number of articles and pamphlets on particular points as they arose. He has probably left a number of notes which it will now be the task of others to reduce to form. The opportunity which a suspension of active work during the great war might have afforded him was lost by a disabling illness from which he never entirely recovered. When Italy joined the Allies, he went to the front and concerned himself with devising special clothes for the troops which would render them less visible among the snows of Alpine altitudes. Physical fatigue superadded to excessive mental labour over a number of years was responsible for a paralytic stroke which endangered his life during the early months of 1916. His brain, happily, was never affected and he made a partial recovery which enabled him, though he never regained the free use of his limbs, to resume his superintendence of antiquities.

His name will ever be remembered for his work in the Forum. But it was the very human element in Boni which most of all endeared him to his contempories and attached them so sincerely to the man who was as simple and kindly as he was wise. Children felt no shyness with him. His humble helpers in the manual labour of excavation and the custodians who appreciated his consideration and helpfulness were all his devoted servants and friends. He radiated benevolence and exercised on all the humanising influence of one who had devoted his life to beauty and truth.

FIG. 1.—BRUNELLESCHI FROM AN OLD PRINT

The Architect in History: his Training, Status and Work

BY MARTIN S. BRIGGS [*F.*]

FOREWORD

THE architect is constantly taunted with living too much in the past. Throughout most of the papers read at the recent Conference on Architectural Education, as in the discussions that followed them, there appeared a consciousness that the long chapter of copybooks and revivals must be closed once and for all; that only by turning over a new leaf and facing modern problems in a new spirit can our salvation be secured. It may, therefore, be felt that any study of the architect in history is superfluous, and, indeed, that it affords only another instance of our habit of helpless retrospection.

But the various discussions of 1924 have focused attention on our status and functions, as well as upon our professional education. When we look back to the past—as we necessarily must—to consider the stages of the architect's evolution, we cannot fail to be astonished by the meagreness of the available material. While innumerable books have been written on the history of architecture, little has been said about the lives and personalities of the men whose brains created our greatest buildings, especially up to the close of the Middle Ages. Certainly the architect has not received due recognition in history.

Too often his name has been concealed or his office misrepresented, as when we are asked to believe that our Gothic minsters were the work of simple-minded and unlettered masons, sustained only by the faith that was in them. We, at any rate, must know that the design and erection of every large and complicated building in the past involved the control of some master-brain, that no group or committee could have taken its place, and that neither Salisbury Cathedral nor the Parthenon could have leapt from the ground at the behest of a handful of rustic craftsmen.

In considering the personality of these great ancestors of ours, there is no need to dispel the glamour that has hitherto enhanced their work just because it has popularly been regarded as anonymous. In many of the best periods of the past there has been a close-knit comrade-

ship of craftsmen that we should emulate rather than regret, a single-minded selflessness of purpose that is altogether admirable. Nevertheless, we may claim honour where it is due, and, if the glory of our greatest buildings has sometimes effaced the identity of their designers, there is no sacrilege in drawing aside the curtain to reveal the human interest that lies behind.

What manner of men were the architects of the past? How were they trained, and how did they work? What were their difficulties? In attempting to answer such questions, it is not necessary to dig up dry bones or to dispel romance.

I. THE FIRST ARCHITECTS.

It is perhaps idle to surmise as to the identity of the first architect. We may rummage among Biblical and pagan myths and legends without much success and with no certainty. Sir Reginald Blomfield has written[1] that :—

. . . " Among the cavemen there were admirable draughtsmen, but they had to make their drawings on the sides of caves."

In the building of cromlechs and dolmens some degree of skill may be involved, but one can hardly be expected to unravel from the darkness that surrounds their origin any evidence as to their designers, and it is even a question whether they should be regarded as architecture. On the other hand, the erection of such primitive structures as huts of wattle and daub obviously called for little dexterity of hand and brain, and they may be ruled out.

We may, therefore, look to Egypt to provide the commencement of our story. Much has been discovered during the past century that illuminates the conditions under which the great tombs and temples were built. The tragic tale of the Captivity has been confirmed, and, though some famous authorities[2] are inclined to discount the hardships of the *corvée*, it appears fairly certain that the chief buildings in the Nile valley were raised only by means of a prodigal waste of human life and labour. But the personality of the architect in ancient Egypt is by no means clear.

He has left us long inscriptions, which are found on many tombs at Thebes where the chief royal architects are buried. But these epitaphs consist simply of pompous boasts as to the greatness of the departed. A few examples will soon cloy the reader's palate.[3] Thus Ineni, who erected an obelisk at Thebes, after assuring us that he was " a really first-class engineer and immensely popular," continues :—

. . . " I became great beyond words ; I will tell you about it, ye people ; listen and do the good that I did—just like me. I continued powerful and met with no misfortune ; my years were spent with gladness. I was neither traitor nor sneak, and I did no wrong whatever. I was foreman of the foremen and did not fail."

His official titles were " Pasha, Count, Chief of all the works in Karnak, Controller of the Double-houses of Silver and Gold, Sealer of all contracts in the House of Amūn, and Excellency in Charge of the Double Granary."

Sennemūt, another architect of obelisks, went to Punt (Somaliland) in Queen Hatshepsōwet's expedition, was her chief architect, and, incidentally, supervised her daughter's education. He describes himself as—

" Pasha, Count, Royal Seal-bearer, Sole Companion, Chief of the Prophets of Monthu in Armant, Controller of the Fields Gardens and Cattle of Amūn," etc. . . . " I was the greatest of the great in the whole land ; one who had audience alone in the Privy Council. I was a real favourite of the King ; foreman of foremen ; superior of the great ; one to whom the affairs of Egypt were reported " ; . . . " I was a noble who was obeyed ; I had access to the writings of the prophets ; there was nothing which I did not know concerning what had happened since the beginning."

Dhutij is described, *inter alia*, as " Director of Works," and Beknekhonsu as " Pasha, Count, High Priest of Amūn, and Chief Overseer of Works." He also gives us a useful outline of his professional career :—

" I passed four years as an infant.
" I passed twelve years as a youth, being chief of the training-stable of King Menmirē (Seti I.).
" I acted as priest of Amūn for four years.
" I acted as Divine Father for twelve years.
" I acted as third prophet of Amūn for fifteen years.
" I acted as second prophet of Amūn for twelve years."

From these wearisome epitaphs we can make certain deductions. It is clear that the Egyptian architect was closely connected both with the temple and the court. If one practitioner began his career as a stud-groom, many more approached their profession by way of mathematics learned in the temple, for we know that education was entirely in the hands of the priesthood,[4] and that Egyptian architecture, from the Pyramids onwards, is based on a profound knowledge of geometry. The control of the " Works Department," as we should call it, was vested in a high officer of Church or State, and he may or may not have taken an active part in the design of buildings. Perhaps he relied for this on technical architects whose names have not been preserved. Yet Ineni himself is said to have been at one time a foreman on one of the gates at Karnak, then on a temple, and not until later did he obtain the " superintendence of the King's building projects." He also says that he " made fields of clay for plastering the tombs of the Necropolis." Dhutij made shrines, thrones, and small furniture for the temple at Karnak, besides doing his ordinary architectural work.[5] The scantiness of the records thus makes it impossible to generalise further as to the architect's training and functions ; his status was evidently satisfactory.

In a very interesting study of the conventions employed by Egyptian draughtsmen, Professor Capart has described their methods of drawing plans.[6] He mentions one plan of a royal tomb, drawn on papyrus, and now preserved in the Turin Museum. He does not state whether these were merely records, or whether they were drawn before the building was erected ; but, seeing that they were capable of drawing such plans, it is reasonable to suppose that architects would use them as they do nowadays.

[1] Sir R. Blomfield, *Greek Art and Architecture*, p. 55. (Oxford, 1922.)

[2] *e.g.* Sir W. Flinders Petrie, *Social Life in Egypt*, pp. 24, 26-7. (London, 1923.)

[3] All taken from R. Engelbach, *The Problem of the Obelisks*, pp. 92–112. (London, 1924.)

[4] Petrie, *Religious Life in Egypt*, p. 41. (London, 1924.)

[5] Engelbach, *op. cit.*, pp. 95, 106.

[6] J. Capart, *Egyptian Art*, pp. 145–8. (London, 1923.)

In the great buildings of Babylonia and Chaldea, as in the work of the later empires that flourished in the Mesopotamian plain, some considerable degree of skill must have been required. Some official must have planned and supervised their erection and even laid them out to form an ordered city. But the name of no architect has been preserved. Where any record exists of these vast projects, it is only the king or the queen who is commemorated.

Milizia[7] and other writers have seen in the craftsmen employed by Moses to build the Tabernacle the counterpart of the modern architect :—

"The Lord hath called by name Bezalel . . . and he hath filled him with the spirit of God, in wisdom, in understanding, and in knowledge, and in all manner of workmanship ; and to devise cunning works, to work in gold, and in silver, and in brass, and in cutting of stones for setting, and in carving of wood, to work in all manner of cunning workmanship. And he hath put in his heart, that he may teach, both he, and Oholiab" . . . "Them hath he filled with wisdom of heart, to work all manner of workmanship, of the engraver, and of the cunning workman, and of the embroiderer, in blue, and in purple, in scarlet, and in fine linen, and of the weaver, even of them that do any workmanship, and of those that devise cunning works."[8]

It cannot be pretended, however, that this passage enlightens us very much in our quest, especially as the Tabernacle is generally believed to have been little more than a large tent or marquee.[9] Nor is there anything bearing very definitely on the status or functions of the architect in the legendary history of Crete.

II. GREECE.

In early Greek writings there are indications of the architect's existence. Six times at least in the *Iliad*, and twice in the *Odyssey*, Homer mentions the τέκτονες (craftsmen) from whom the architect or master-craftsman derived his name in later years (ἄρχω = I command ; τέκτων = craftsman). In other passages we find references to Dædalus, who is credited with invention of the saw and other tools ; to Trophonius and Agamedes, like Dædalus, of royal birth ; and to Euryalus, said to have introduced the making of bricks and the construction of dwelling-houses into Greece for the first time. All of these were claimed as architects by later Greek writers. It appears that the τέκτονες were not masons, but rather workers in wood or metal (*i.e.*, carpenters and smiths) on buildings and on ships, and that the architect was a master-carpenter or a master-smith rather than a master-mason.[10] On the other hand, the word ἀρχιτέκτων is also used in contradistinction to χειροτέκνης (manual worker).[11]

Milizia[12] records the names of a score or so of Greek architects who flourished during the centuries subsequent to legendary times and prior to the age of Pericles. He bases his statements largely on the writings of Vitruvius (who lived in Rome hundreds of years later), Strabo, Pausanias, and other Greek historians, but fails to create any definite picture of the architect as a human personality. Yet he tells us[13] that the ingenious Hermogenes, getting into trouble with the triglyphs of the Doric order when a certain temple was well under way, changed his mind and adopted the Ionic, though the stone was already cut and waiting on the site. This seems to indicate that Hermogenes was a privileged person, of recognised professional status (or, alternatively, of noble birth). Then there was Callimachus, who became famous for his legendary modelling of the Corinthian capital from a basketful of growing acanthus. He is also credited with the invention of a lamp that burned for a year without replenishment, a testimonial to his ability to hoodwink the public.[14] There were Ctesiphon and Metagenes, his son, who designed and built the Temple of Diana at Ephesus, using many mechanical contrivances to surmount difficulties encountered in the construction ;[15] and four architects who worked together on the Temple of Jupiter at Athens.[16] There were architects who wrote books on their art, such as Tarchesius, Argelius,[17] and Hermogenes already mentioned. There were some whose reputation rested on one building, such as Andronicus, who designed the Tower of the Winds at Athens ;[18] and Libon of Messena, to whom is ascribed the Temple of Jupiter at Olympia.[19] Others seem to have enjoyed a large provincial temple-practice, among them Chirisophus the Cretan, at Tegea,[20] and Pheaces, at Agrigentum.[21] Meticus laid out a square in Athens, and eventually it was named after him.[22] Chirisophus had a statue erected in his honour in one of the temples he built.[23] Yet from all these miscellaneous and doubtful statements there emerges but a shadowy figure of the architect in primitive Greece. We are told nothing of his training, nothing of his remuneration, and little of his methods of work. In some cases he seems to have been a person of consequence ; and even in those early days he had contracted the habit of writing about architecture, sometimes in the familiar form of rules for the Orders, more often describing (and perhaps advertising) his own buildings.

As we pass out of these misty centuries into the brilliant light of the Periclean age, we naturally expect to find adequate records of those architects who did so much for the beautification of Athens. Yet even here history is singularly silent, and all the wealth of learning that for a century has been lavished on the Athenian Acropolis has failed to reveal anything tangible about Ictinus, Callicrates, and the rest. This may be due partly to the prominent part played by Pericles and Pheidias in the rebuilding and embellishment of Athens in their day. Pheidias was a sculptor, but, though architects were employed on the various temples, etc., it was to him that the superintendence of the great building projects was

[7] F. Milizia, *Lives of Celebrated Architects*. Trans. Mrs. Cresy. I, 6. (London, 1826.)
[8] Exodus, xxxv. 30–35 (R.V.).
[9] See Dr. Schick's restoration at Jerusalem.
[10] C. Lucas, s.v. "Architectus," in Daremberg et Saglio, *Dictionnaire des Antiquités*. (Paris, 1877, etc.)
[11] Liddell and Scott, s.v. Ἀρχιτέκτων.
[12] Milizia, *op. cit.*, I, 16–41.
[13] Vitruvius, IV, 3.
[14] Vitruvius, IV, 1 ; Pausanias, I, 26.
[15] Vitruvius, X, 6.
[16] Vitruvius, VII, preface.
[17] *Ibid.*, IV, 3.
[18] *Ibid.*, I, 6.
[19] Pausanias, V, 10.
[20] *Ibid.*, VIII, 53.
[21] Diodorus Siculus, XI, 2 ; and XIII, 12.
[22] Jul. Pollux, VIII, 10.
[23] Pausanias, VIII, 53.

entrusted.[24] Pericles, who for many years had been a generous patron and connoisseur of the arts, may even have entered the field of architecture himself :—

" By conversing with the most able architects, and from the instruction of his great friend Anaxagoras, a philosopher of the first rank, and president of architecture, he acquired that science."[25]

If Milizia is correct in his rendering, we may hail in Pericles the first of those " gifted amateurs " who, at intervals through history, have developed from connoisseurs into practitioners of our art. He is said to have " superintended " the Odeon at Athens.[26]

On the other hand, the professional status of the architect (now definitely labelled as ἀρχιτέκτων) seems to have become generally recognised, although he was not always accorded full credit for his work. Pausanias, writing many centuries later, states that in most Greek towns the authorship was ascribed to the gods, to mythical heroes, or to local worthies. Valerius Maximus writes that Athens was rightly proud of its Arsenal, an admirable work, and that Philo, its architect, gave so eloquent a description of its merits " that the most enlightened community in the world applauded him no less for his oratory than for his talent as an architect."[27]

In the days of Pericles, it is surely safe to assume that any artist, even without the silver tongue of Philo, would receive due recognition.

The nature of the architect's duties at that period seems to have been vague. Thus Scopas combined the functions of sculptor and architect,[28] while Philo carried out what we should now describe as civil engineering.[29] For the long wall of Athens Callimachus was " contractor " (ἐργολάβος). Hippodamus of Miletus laid out the city of Rhodes, as well as building temples there.[30] Sir Reginald Blomfield considers that the Greeks had hardly begun to realise, in the fifth century, the possibilities of grouping buildings on axial lines,[31] but this view is somewhat opposed to recent writings on town-planning,[32] in which it is stated that, in the fifth-century cities of Piraeus, Thurii, Rhodes, Selinus, and Cyrene, a system of rectangular streets was provided, with the agora and chief buildings at the intersection of the two main thoroughfares. Indeed Aristotle attributes to Hippodamus the introduction of this principle. We may therefore number the functions of the town-planner among the attributes of the Greek architect in the days of Pericles.

Vitruvius quotes the Greek architect Pytheos, whose Commentaries have since been lost, to the effect that " an architect ought to be able to accomplish much more in all the arts and sciences than the men who, by their own particular kinds of work and the practice of it, have brought each single subject to the highest perfection." " But this "—observes the canny Roman—" is in point of fact not realised."[33] Yet it is evident that an architect was expected to be at least a Jack-of-all-trades, if not an Admirable Crichton. Sometimes veering towards the sculptor, sometimes towards the engineer, he was capable on occasion of designing theatrical properties and scenery[34] or the paraphernalia for public festivals.[35] We may gather that when Vitruvius tells us that " the ancients " expected an architect to be a man of good general education, he was referring to the Greeks.[36] And though some authorities[37] consider that among those described as " architect " in inscriptions were certain persons better styled " contractor " (ἐργολάβος), it is established that the architect was almost always a well-known and well-educated professional man, occupying a recognised position in society. This does not imply that the Greek architect was not expected to add the acumen of a business man to his other qualifications. At Ephesus, according to Vitruvius,[38] there was a law under which, if an architect's " extras " exceeded the contract amount by more than 25 per cent., he was held liable for them personally. In all probability architects accompanied each mission of civil and religious leaders that was sent to found a colony overseas, for the standard of design evident in buildings erected by newly-arrived settlers was so high, and their features resembled so closely the characteristics of architecture in the mother-country, that other proof is hardly necessary. Vitruvius gives us a long list of Greek architectural writers, proving that in those days literature and art went hand in hand.

Documents of the fourth century[39] state that an architect's pay was approximately ten times that of a workman, though the figures quoted do not easily enable us to make a comparison with modern standards. With authentic evidence as to the social status of the architect, and with inferential knowledge of his duties, it remains to form some hypothesis as to the nature of his training in the Golden Age of Greece. " Within their limits, in their mastery of what they set themselves to do "—writes Sir Reginald Blomfield—" the artists of the age of Pericles remain unapproachable."[40] How did they attain this eminence ? We do not know whether they learned their craft in the *atelier* of a master, as pupils or apprentices, or whether there were schools in which they were trained. But close examination of the Parthenon and other masterpieces of the period has made it certain that such optical and æsthetic refinements as have been revealed therein could only have been achieved by long and patient study. Just as the marvellous success of St. Paul's dome must be ultimately attributed to the great brain of a man who was once a professor of mathematics, so it is only by this avenue of approach that the architects of the Parthenon could have created the most perfect building known to us. The lesson that we of to-day have to learn from Ictinus and Callicrates is that the greatest artist, whatever his dower of talent, can only achieve full mastery of his art by thorough and even tedious training.

For the last chapter of the story of the Greek architect, the scene shifts to the coast of Egypt, and two more

[24] Plutarch, *Pericles*, XII, 5.
[25] Milizia, *op. cit.*, I, p. 43.
[26] Plutarch, *Pericles*, XII, 5.
[27] Valerius Max., VIII, xii, 2.
[28] Pausanias, VIII, 45.
[29] Plutarch, *Sulla*.
[30] Strabo, XIV.
[31] Blomfield, *op. cit.*, p. 71.
[32] Hughes & Lamborn, *Towns and Town-planning*, pp. 3-4. (Oxford, 1923.)
[33] Vitruvius, I, 1.
[34] *Ibid.*, VII, 6.
[35] Diodorus Siculus, V.
[36] Vit., I, 1.
[37] Quoted in C. Lucas, *op. cit.*, p. 380.
[38] Vitruvius, X, preface.
[39] Quoted in C. Lucas, *op. cit.*, p. 374. I doubt this.
[40] Blomfield, *op. cit.*, p. 68.

shadowy figures flit across our stage. Dinocrates, a skilful and ingenious architect of Macedonia, was employed by Alexander to lay out his wonderful new city. The means by which he attracted royal notice are worthy of the attention of every aspiring professional man. The usual letters of recommendation to influential persons having proved futile,

"he had recourse to his own efforts. He was of very lofty stature and pleasing countenance, finely formed, and extremely dignified. Trusting, therefore, to these natural gifts, he undressed himself in his inn, anointed his body with oil, set a chaplet of poplar leaves on his head, draped his left shoulder with a lion's skin, and holding a club in his right hand, stalked forth to a place in front of the tribunal where the king was administering justice."

To cut the story short, as soon as the king noticed him and asked his identity, Dinocrates put forward a scheme—

"for shaping Mount Athos into the statue of a man, in whose left hand I have represented a very spacious fortified city, and in his right a bowl to receive the water of all the streams which are in that mountain, so that it may pour from the bowl into the sea."[41]

In any well-regulated moral tale, this should have been the end of Dinocrates, but it was not a moral age, and by this charlatan's trick he attained his end. Substitute horn spectacles and side-whiskers for Dinocrates' disguise, and you have—*mutatis mutandis*—a very accurate portrait of the pushful architect of to-day. But Dinocrates was a man of real ability, and the plan that he drew for the new city, still commemorated by some of the streets of Alexandria at the present time, was perhaps the greatest achievement of ancient town-planning.

Sostratos, "the friend and favourite of kings,"[42] at a later period had the unusual privilege of designing one of the Seven Wonders of the ancient world, the Pharos at Alexandria.[43] We know very little about him otherwise, except that he hailed from Cnidos, and had made some reputation as an architect there. But evidently Ptolemy Philadelphos made his choice with discrimination, for, even if we allow for inaccuracy and exaggeration in contemporary writers, there can be no doubt that the idea and the erection of this great lighthouse represented a marvellous feat for any man. When the huge monument was completed, it bore on a panel a complimentary inscription in honour of Ptolemy, but, after a few years of Mediterranean gales had done their work, the cement surface of the panel peeled away, revealing, in bold letters carved in the stone and filled with lead, the words :—"Sostratos of Cnidos, son of Dexiphanes, to the gods the saviours, for the benefit of mariners." Surely there is a professional grievance behind this story ?

One more incident of this Hellenistic period relates to the status of the architect. Polybius states[44] that in A.D. 220 Ptolemy Philopater sent a hundred "architects" to Rhodes, which had been damaged by an earthquake. This statement has been used to prove that architects were then extremely plentiful in Alexandria, but it may well be assumed that among this hundred there were practitioners of the other arts. (The word used by Polybius is not ἀρχιτέκτονας but οἰκοδόμους, which Liddell and Scott define as "builder, architect," and the latest translator[45] has rendered it "master-builders" in this case.)

[41] Vitruvius, II, preface.
[42] Vitruvius, V, 1.
[43] Strabo, XVII.
[44] Lexicon, latest edition.
[45] In the "Loeb Library."

III. ROME.

Thanks to our possession of Vitruvius' famous treatise, we know a little more of the Roman architect than of his Greek predecessor, though even on this subject information is lamentably meagre. Vitruvius is generally supposed

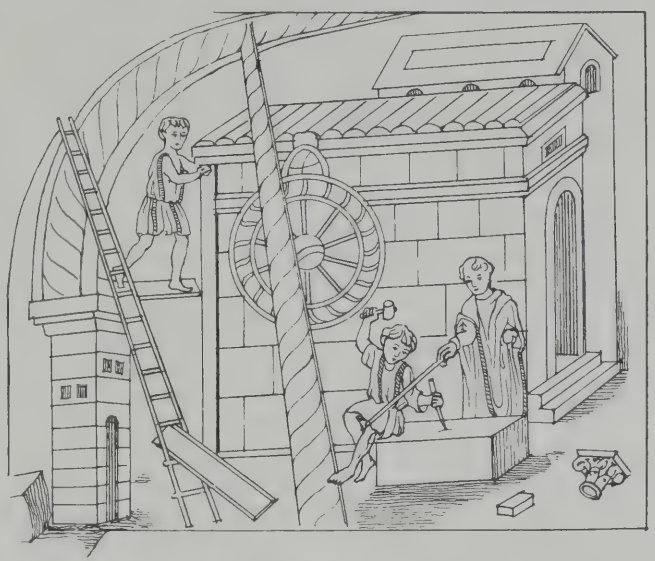


FIG. 2.—ROMAN ARCHITECT AND MASONS AT WORK
From a fourth-century MS. of Virgil at the Vatican
Drawn by M. S. Briggs

to have lived in the brilliant age of Augustus, and to have been able to devote his time to literary work because he was in receipt of a pension from that great patron of the arts.[46] Probably Félibien is more correct in his reading of the Latin,[47] and, if so, Vitruvius was paid a salary for designing artillery, in which case he would have little time for designing buildings. He describes in detail[48] a basilica that he designed at Fano, but beyond this history is silent. His work is divided into ten books, and was intended to cover the whole field of contemporary knowledge, as, on the whole, it succeeds in doing. Beginning with a preface on the education of the architect, he deals in turn with sites, building materials, temples, the Orders, the planning and grouping of public buildings, private houses, decoration and decorative materials, and water-supply ; concluding with two chapters that cover ground not traversed by the modern architect, viz., astronomy and its application ; and mechanical appliances for hoisting, for raising water, and for military purposes. He therefore supplies us with a manual of

[46] Milizia, *op. cit.*, I, p. 83.
[47] J. F. Félibien, *La vie des plus célèbres architectes*, p. 69. (Paris, 1690.)
[48] Vitruvius, V, 1.

design and building-construction, interspersed so freely with references to the practice of " the ancients " that it may be said to include the history of architecture. (It is worthy of notice that in his day the modern tendency to divide architectural study into three separate and watertight compartments—design, construction, and history—had not appeared.) It has been fashionable to make fun of Vitruvius for his pedantry and his prolixity, but probably the blame lies rather with those who have misused his invaluable and often entertaining work. The introductions to his various " Books " are certainly fulsome to our way of thinking, but were written in the language and manner of his time to the royal patron who made his writing possible. Together with much that is superfluous, they contain many illuminating allusions to architectural practice in his own day, more helpful for our purpose than the technical matters with which the bulk of his treatise is concerned. In his preface to Book V he admits the difficulty of writing on architecture for the general public, showing that he anticipated a circle of readers wider than his own profession; and in the preface to Book VII he acknowledges his indebtedness to the numerous architects whose writings he has consulted.

" But for my part, Caesar, I am not bringing forward the present treatise after changing the titles of other men's books and inserting my own name, nor has it been my plan to win approbation by finding fault with the work of another. On the contrary, I express unlimited thanks to all the authors that have in the past, by compiling from antiquity remarkable instances of the skill shown by genius, provided us with abundant materials of different kinds."

Of the long list of authorities that follows, the majority are Greeks. Their writings have unfortunately perished, but it is interesting to find Ictinus and other practising architects among the authors. It appears that some of these works were manuals of the theory of architectural design, and more were descriptions of buildings actually executed. None of them seems to have dealt specifically, as Vitruvius does, with construction. He expresses his regret that, up to his day, Roman architects had written so little, and mentions one or two who might advantageously have done so. In an earlier passage,[49] after stating that he has never been eager to make money by his practice, and that " only a little celebrity has followed," he makes the ingenuous observation: " but still, my hope is that, with the publication of these books, I shall become known even to posterity." His hope has been realised !

Returning to his preface to Book I, we find his views on the education of the architect set forth with considerable fulness and freedom. He is convinced that technical training must be broad, and both theoretical and practical in character.

" Architects who have aimed at acquiring manual skill without scholarship have never been able to reach a position of authority to correspond to their pains, while those who relied only upon theories and scholarship were obviously hunting the shadow, not the substance. But those who have a thorough knowledge of both, like men armed at all points, have the sooner attained their object and carried authority with them."

His curriculum for the architectural student has often been quoted :—

" Let him be educated, skilful with the pencil, instructed in geometry, know much history, have followed the philosophers with attention, understand music, have some knowledge of medicine, know the opinions of the jurists, and be acquainted with astronomy and the theory of the heavens."

No modern architect would deny the importance of draughtsmanship and geometry, but the value of the other subjects is less obvious, and Vitruvius' own explanation must be given. The " knowledge of medicine," to which he refers, means what we now call "architectural hygiene," and the " opinions of the jurists " represent what we term " architectural law." The " history " he mentions would be better defined as " historical symbolism "; the philosophy " makes an architect high-minded and not self-assuming, but rather renders him courteous, just, and honest without avariciousness " (including also a knowledge of physics); finally, music and astronomy were required in those days for purposes which he explains, but which have lost their significance in modern times.

It may be objected that such a curriculum is of a general rather than a technical nature, and that it omits the two most important subjects in modern architectural training, design and construction. That Vitruvius did not mean to exclude these from his syllabus is apparent from the scope of his own treatise, which is largely devoted to them. Probably he intended his list of subjects to form a preliminary course of general education, to be followed by technical training on the lines of his textbook. He makes it clear that he attached great value to general education :—

" I think that men have no right to profess themselves architects hastily, without having climbed from boyhood the steps of these studies, and thus, nursed by the knowledge of many arts and sciences, having reached the heights of the holy ground of architecture."

We are left in complete ignorance of the means by which the young architect acquired his knowledge, whether in a school or from a practitioner; nor do we know whether the Roman State, so highly organised in many respects, required an architect to satisfy any test or obtain any diploma before he commenced practice. Lampridius tells us[50] that Alexander Severus (A.D. 222-235) established professors of architecture and numerous other subjects, to whose classes poor people could send their children in return for payment in kind. But that estimable emperor died young, so that his reforms may have had little effect.

It is known that building by-laws existed both in Rome and elsewhere. Thus in Rome itself the thickness of brick walls was prescribed in relation to their height, but outside the city boundaries the regulations were less stringent.[51] At Utica the magistrate had to certify that all bricks had been made at least five years before use.[52] The idea that the architect in ancient times was an untrammelled genius, subject to none of the sordid restrictions that limit the individualist to-day, is a pure myth.

The scope of his duties appears to have been wide. It certainly included the work of what we now call a " town-

[49] Vitruvius, VI, preface.
[50] Lampridius, *Alexandri Severi Vita*, XLIV.
[51] Vitruvius, II, 8.
[52] *Ibid.*, II, 2.

planner." Moreover, the architect, like Inigo Jones in later days, seems sometimes to have designed the trappings of triumphal progresses.[53] Military engineering also formed a recognised part of his duties, as is confirmed by Book X of Vitruvius. Hippias is said to have specialised in the designing of *thermae*.[54] Cicero employed the architect Cluatius to design a monument in memory of Tullia, and writes thus to a friend about it:—

" For my part I have no doubt about the design (I like Cluatius' design), nor about the erection (on that I am quite determined); but I have some doubts about the place."[55]

Cicero must have been a valuable " client," for he built or bought at least 21 houses in his lifetime, besides one which came to him by inheritance. But, as he employed five different architects, one may infer that he was not an easy man to deal with. Pliny the Younger made a hobby of architecture, and the long descriptions of his various villas, contained in his letters, are well known.[56] But though one can imagine him to have been a sympathetic and discriminating client, his architects too must have experienced the troubles usually associated with work for a gifted amateur. His enthusiasm for building was such that Milizia includes him in his list of celebrated architects,[57] explaining that, " though not an architect by profession, he was very learned, and built many edifices, which he has described with great ability." The emperor Hadrian is stated[58] to have himself designed the Temple of Venus at Rome. But the most remarkable view of an architect's functions seems to have been held by Crassus, as Plutarch relates[59]:—

" Observing how natural and familiar at Rome were such fatalities as the conflagration and collapse of buildings, owing to their being too massive and close together, he proceeded to buy slaves who were architects and builders (*ἀρχιτέκτονας καὶ οἰκοδόμους*). Then, when he had over five hundred of these, he would buy houses that were afire, and houses which adjoined those which were afire, and these their owners would let go at a trifling price owing to their fear and uncertainty. In this way the largest part of Rome came into his possession. But though he owned so many artisans, he built no house for himself other than the one in which he lived; indeed he used to say that men who were fond of building were their own undoers, and needed no other foes."

This extract indicates that architects were sometimes drawn from the class of slaves, and we know of many who were freed slaves. On the other hand, both Cicero[60] and Vitruvius agree that architecture is one of the learned professions, for which men of good birth and good education are best suited. We know of at least one Roman architect who was a consul, and another who became a senator, and it appears that the status of the profession rose in the later days of the Empire. The names of rather more than a score of Roman architects prior to Constantine's day have been preserved. But we are told little more than their names and the titles of their principal buildings, little that sheds any light on their personalities or their methods of work. On the whole, Rome seems to have honoured her architects; but occasionally they were forbidden to " sign " their buildings, and Pliny the Elder cites the case of Saurus and Batracus, who retaliated by carving a lizard and a frog on a temple that they had built.[61] (This story seems almost too good to be true, and the average architect does not possess a name that is so readily translated into an appropriate emblem.)

Our knowledge of professional etiquette in Rome is slight, but a paragraph from Vitruvius[62] shows that in his time there were black sheep of the same type that troubles us to-day:—

" Other architects go about and ask for opportunities to practise their profession; but I have been taught by my instructors that it is the proper thing to undertake a charge only after being asked, and not to ask for it; since a gentleman will blush with shame at petitioning for a thing that arouses suspicion."

The prototype of the modern architect who cannot avoid " extras " appears in another paragraph. After mentioning the sound methods adopted at Ephesus to deal with this nuisance (see above), Vitruvius proceeds[63]:—

" Would to God that this were also a law of the Roman people, not merely for public, but also for private buildings. For the ignorant would no longer run riot with impunity, but men who are well qualified by an exact scientific training would unquestionably adopt the profession of architecture. Gentlemen would not be misled into limitless and prodigal expenditure, even to ejectments from their estates, and the architects could be forced, by fear of the penalty, to be more careful in calculating and stating the limit of expense, so that gentlemen would procure their buildings for that which they had expected, or by adding only a little more. It is true that men who can afford to devote four hundred thousand to a work may hold on, if they have to add another hundred thousand, from the pleasure which the hope of finishing it gives them; but if they are loaded with a fifty per cent. increase, or with an even greater expense, they lose hope, sacrifice what they have already spent, and are compelled to leave off, broken in fortune and in spirit."

Presumably there were many architects in Roman times who had lucrative practices; this we may assume from the enormous amount of costly building that was done, and from the position that some of them occupied in society, but definite information is lacking. The sad case of Apollodorus of Damascus is related by Spartian.[64] After enjoying an extensive and varied practice under Trajan, he was imprudent enough to offend Hadrian, the next emperor, by criticising a temple which that versatile monarch had designed. The architect pointed out that, if the deities whose statues were sitting in the temple were to stand up, they would bump their heads against the roof. This tactless remark, unworthy of an experienced professional man, cost Apollodorus his head.

There is evidence that Roman architects drew plans of their buildings on parchment,[65] and also that models were frequently submitted.[66] The instruments that they used for drawing and for testing the angles of their buildings are sometimes found illustrated on early bas-reliefs

[53] Panvinius, *De Triumpho*, p. 141.
[54] Lucan, *Dialog. Hipp.* [55] Cicero, *Ad Atticum*, XII, 18.
[56] Pliny, *Letters*, II, 17, and V, 6. [57] Milizia, *op. cit.*, p. 92.
[58] Dion Cassius, LXIX, 4.
[59] Plutarch, *Life of Crassus*, II.
[60] Cicero, *De Officiis*, I, 42.
[61] Pliny, *Hist. Nat.*, XXXVI, 4, 28.
[62] Vitruvius, VI, preface. [63] *Ibid.*, X, preface.
[64] Spartian, *Vit. Hadrian.* [65] Aulus Gellius, XIX, 10.
[66] Cicero, *Ad Q. Frat.*, II, 6.

and frescoes,[67] and Vitruvius describes[68] the levelling apparatus used for setting out aqueducts and other works.

Such, in brief, is the picture that remains to us in literature of the Roman architect up to the time of Con-

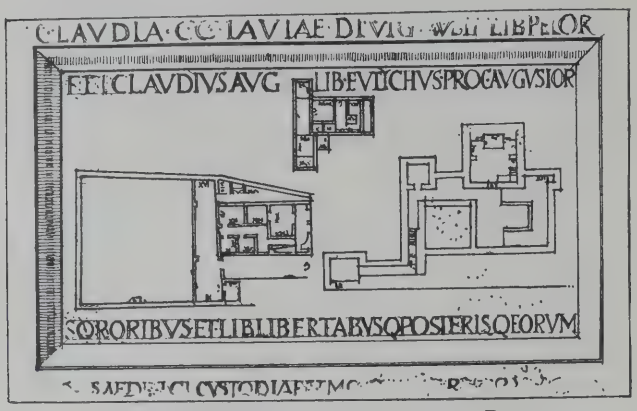


Fig. 3.—Roman Plan on Marble from Perugia
Drawn by M. S. Briggs from a photograph
(This is a plan of a tomb near a guardhouse, with dimensions of the rooms in figures. Above is a plan of the upper floor to a smaller scale.)

stantine. The foundation of Constantinople led to an important event in the history of the architectural profession. In the words of Gibbon[69] :—

" The impatience of Constantine soon discovered that, in the decline of the arts, the skill as well as numbers of his architects bore a very unequal proportion to the greatness of his designs. The magistrates of the most distant provinces were therefore directed to institute schools, to appoint professors, and by the hope of rewards and privileges to engage in the study and practice of architecture a sufficient number of ingenious youths who had received a liberal education."

The edict in question, dated A.D. 334, appears in the *Codex Theodosianus* (Lib. XIII, Tit. 3), and a reference to the original Latin shows also that it was addressed to the African provinces of the Empire, and that the students were to be " about 22 years of age." Two further edicts, dated 337 and 344 respectively, refer, too, to the training of architects and craftsmen. In the British Museum Library are three portly volumes containing the whole of the *Codex Theodosianus*, with a commentary in Latin by Godefroy, published at Lyons in 1665. A better Latin scholar than the present writer could find, in the two large pages of commentary on the edicts of 334 and 344, much interesting information about this experiment in the mass-production of architects to meet an emergency. (Vegetius states that at the beginning of the fifth century there were 700 architects in Rome, possibly as a result of Constantine's measure just described.)

Some two centuries later, we find the following reference to the duties of an architect in a letter written to " Aloisius the Architect " at Ravenna by Cassiodorus, on behalf of his master, King Theodoric (455–526)[70] :—

" This fountain then, as we before said, deserves a worthy habitation. If there be anything to repair in the *thermae* themselves or in the passages, let this be done out of the money which we now send you. Let the thorns and briars which have grown up around it be rooted up. Let the palace, shaken with extreme old age, be strengthened by careful restoration. Let the space which intervenes between the public building and the source of the hot spring be cleared of its woodland roughness, and the turf around rejoice in the green beauty which it derives from the heated waters."

More explicit and informative is a later passage by the same writer[71] :—

" Formula of the Palace Architect."

" Much do we delight in seeing the greatness of our Kingdom imaged forth in the splendour of our palace . . . Take then for this Indiction the care of our palace, thus receiving the power of transmitting your fame to a remote posterity which shall admire your workmanship. See that your work harmonises well with the old. Study Euclid—get his diagrams well into your mind ; study Archimedes and Metrobius.

" When we are thinking of rebuilding a city, or of founding a fort or a general's quarters, we shall rely on you to express our ideas on paper. The builder of walls, the carver of marbles, the caster of brass, the vaulter of arches, the plasterer, the worker in mosaic, all come to you for orders, and you are expected to have a wise answer for each. But then, if you direct them rightly, while theirs is the work, yours is all the glory.

" Above all things, dispense honestly what we give you for the workmen's wages ; for the labourer who is at ease about his victuals works all the better."

" As a mark of your high dignity you bear a golden wand, and amidst the numerous throng of servants walk first before the royal footsteps that even by your nearness to our person it may be seen that you are the man to whom we have entrusted the care of our palaces."

Other architects of this late period included Cyriades, expert in architecture and mechanics, who became a consul and was employed by Theodosius to build bridges;[72] Entinopus of Candia, who was concerned in the foundation of Venice ; Dalmatius bishop of Rhodes, who attempted to practise architecture without knowledge and with disastrous consequences ; and the two famous architects from Asia Minor—Anthemius of Tralles and Isidorus of Miletus—who designed and built for Justinian in A.D. 532 the great church of Sancta Sophia in Constantinople. Our knowledge of their work is derived from a book of Procopius, *De Aedificiis* ; but, as it was written to reinstate its author in the favour of the emperor, it abounds in exaggeration, inaccuracy, and fulsome flattery. According to Procopius, Justinian himself played a very active part in the direction of the work, spending much time on the building as it was in course of erection, and on more than one occasion offering inspired advice when his architects got out of their depth. The modern architect will be more inclined to ascribe the credit for this masterpiece to his professional brethren of long ago, for even Procopius admits their outstanding genius. Anthemius, we are informed, was an engineer and sculptor as well as an architect. He wrote a book on machines and " invented various methods of imitating earthquakes, thunder and lightning."[73]

[67] See C. Lucas, *op. cit.*, p. 381. [68] Vitruvius, VIII, 5.
[69] Gibbon, *Decline and Fall*, ch. XVII.
[70] Cassiodorus, *Variae* (trans. T. Hodgkin), II, 39.
[71] *Ibid.*, VII, 5.
[72] Symmachus, *passim.*
[73] Milizia, *op. cit.*, I, p. 119.

We may or may not believe Vegetius when he tells us that Justinian employed 500 architects in all ; it is more valuable to us to know that the architects of later Rome, as of the Augustan age, were versatile and well-trained men, whose success was due in part to their mathematical bias and their sound practical knowledge.

IV. THE MIDDLE AGES.

The personality of the mediæval architect still remains tantalisingly elusive, in spite of the vast amount of literature describing mediæval architecture. But some recent critics have succeeded in dispelling a good deal of the misunderstanding that has hitherto surrounded him. It is now generally agreed that his functions have been both misrepresented and depreciated by writers who ought to know better. A passage from Mr. March Phillipps's suggestive and interesting book, *The Works of Man*, is typical of the extreme view of those who would deny his very existence[74] :—

" Added to much that is unique in it, Gothic has this, that it was built, so one may almost say, without the help of architects. In spite of the appalling difficulties to be overcome, and the daring innovations involved, any one could build Gothic. The people needed no teaching in the style. They seemed already to know all about it, and the architecture consequently rose, not slowly and by degrees, but spontaneously with one impulse, rather like the uplifting of some tremendous chorus than the slow setting of stone upon stone."

Now it is evident to any serious student of architecture that this wild statement contains more than one fallacy. The history of almost any great Gothic church shows that its growth was gradual, that its design was modified or altered during erection, and that to the masons employed upon it the " slow setting of stone upon stone " was slow indeed. But, on the other hand, we must remember that romantic passages of this kind, like the purple patches of Ruskin, are read more widely than are the more sober writings of architects, and that because of their literary excellence they have had an enormous influence upon the educated public on whose patronage and sympathy the reputation of the architect so largely depends.

Among the great mass of such people, as among architects themselves to a limited extent, it may safely be said that the following fallacies are commonly accepted : that there was no independent directing personage or " architect " in the Middle Ages ; that the controlling force was exercised by an artisan, the " master-mason," not by an educated professional man ; that no preliminary plans or working drawings were used ; that design was purely traditional, no ideas being borrowed from buildings of other styles or countries ; that the masons worked for the glory of God rather than for mere bread and butter ; that the master-mason lived on the building, not undertaking other work in the way that a modern architect runs a " practice " ; that he learned his trade at a bench, not in an office or a school ; that he was usually a monk, or a lay-brother attached to a monastery ; and that he gloried in his anonymity.

It cannot be denied that some of these fallacies have a foundation in fact ; but it is equally certain that they are inaccurate when used as sweeping generalisations (more often, be it noted, by literary men than by architects). Before proceeding to discuss these points in detail, some consideration should be given to the causes that have brought about such a distortion of facts.

+ CI GIT MAISTRE HUES LIBERGIER
S · QUI · COMENSA · CESTE · EGLISE · AN · L AN · DE · LINCARNATION · M · CC · XXIX · LE MAR
DI · DE · PAQUES · TRESPASSA · LAN · DE
LINCARNATION · MCC · LXIIII · LE SEMEDI · APRES · PAQUES · POUR · DEU · PRIEZ · POUR · LUI +

FIG. 4.—TOMB-SLAB AT S. NICAISE, RHEIMS, in memory of Hugh Libergier (d. 1263), architect of the church

Drawn by M. S. Briggs from a photograph

(The inscription reads :—" CI GIT MAISTRE HUES LIBERGIERS . QUI COMENSA CESTE EGLISE EN LAN DE LINCARNATION M·CC·[?]·XXIX LE MARDI DE PAQUES TRESPASSA LAN DE LINCARNATION MCC·LXIII LE SEMEDI . APRES PAQUES . POUR . DEU . P[R]IEZ . PO[U]R LUI + ")

The identity of the master-mason is often, admittedly, obscure ; but, as is explained later in this chapter, by no means always so. He was frequently a layman, and

[74] L. March Phillipps, *The Works of Man*, pp. 200–1. (London, 1911.)

the monkish scribes who acted as chroniclers in the Middle Ages preferred to commemorate the abbot or bishop who corresponded to a modern " Chairman of the Building Committee " ; their concern was with the glorification of their Church or Order more than with the perpetuation of a mere artist's name. When an inscription states than an ecclesiastic " built " (*fecit*) a church, it means that he ordered it and paid for it.[75] (Too often nowadays we find a similar neglect of the man whose brain has created the design of the building.)

There seems to have been a rift between the artist and the scribe in England and France, though in Italy a closer touch was maintained between literature and the arts, and every little commune delighted to honour its brilliant sons, whether they were laymen or clerics.[76]

Returning to the first " fallacy " mentioned above, it may be stated without doubt that for every mediæval building of any importance there was an architect. By an " architect " we mean, primarily, a man who designs and superintends the construction of a building. Whether his training is acquired in a workshop or an " office " is immaterial, nor does it matter in the least what title his contemporaries choose to give him. If he performs this dual function of design and superintendence properly, he is an architect. Can it be argued that there was any alternative in the Middle Ages ? It has often been stated that our cathedrals were the work of a school rather than of an individual. But that one cannot believe. An architect may have formed one of a group of craftsmen, just as in the great modern architectural offices in America there is a partnership of specialists in the various branches of architecture. He may have been trained to follow a tradition, yet the severest criticism that can be made of Renaissance architects is that they followed the tradition of Vitruvius too closely. The " school " theory collapses simply because human nature declines to allow group-working to go beyond a certain point. No group or guild or committee could design a cathedral, and it is very unlikely that they could supervise its erection without delegating their powers to one of their number. Is it conceivable that workmen would obey orders from a group of twenty masters, or that such orders would not be mutually contradictory ? However well such a group or school might be organised, one person must eventually have been made responsible for design and one for super-intendence. Where, as seems to have been the general rule, he combined both functions, we have the modern architect in his mediæval form.[77]

This argument is in no way weakened by admitting that the title of " architect " was seldom applied to him. It occurs in its Latin form at least as early as the twelfth century,[78] when it is applied to the designer of the castle at Ivry ; but its use is not general till Renaissance times, when the personality of the architect becomes definite in all civilised countries. During the Middle Ages the architect is described as *ingeniator, aedificator, cementarius*, and *lathomus* in Latin ; as *lapicida* or *capo-maestro* in Italian ; as *masson* or *maistre* in old French ; as " mason " or " master-mason " or simply " master " in English.[79] In one instance at least in France the term *Doctor lathomorum* is used, and that seems significant. Ruskin,

FIG. 5.—TOMB-SLAB OF MASTER WILLIAM DE WERMINGTON (*c.* 1427) AT CROWLAND ABBEY
Drawn by M. S. Briggs from a print
(The inscription reads :—" ICI : GIST : MESTRE : WILLM̃ : DE : WERMĨGTON : LE : MASON : A : LALME : DE : KY : DEV...Y : P : SA : GRACE : DOUNEZ : ABSOLUTION ")

in a characteristic and absurd attack on the architect,[80] has something to say of these mediæval names :—

" It became apparent to me that the master workman must have been the person who carved the bas-reliefs in the porches ; that to him all others must have been subordinate, and by him all the rest of the cathedral essentially arranged ; but that in

[75] G. G. Coulton, *Social Life in Britain*, p. 480. (Cambridge, 1919.)
[76] *Ibid.*, p. 466.
[77] On this see Sir T. G. Jackson, *Gothic Architecture*, I, pp. 264–5 (Cambridge, 1915) ; L. F. Salzman, *English Industries of the Middle Ages*, pp. 103–4 (Oxford, 1923).
[78] Orderic Vitalis.
[79] J. F. Félibien, *La vie . . . des plus célèbres architectes*, p. 209. (Paris, 1690.)
[80] Ruskin, *Seven Lamps*, Appendix I.

fact the whole company of builders, always large, were more or less divided into two great flocks, of stone-layers and sculptors ; and that the number of sculptors was so great, and their average talent so considerable, that it would no more have been thought necessary to state respecting the master builder that he could carve a statue than that he could measure an angle or strike a curve."

(" The name by which the architect of Cologne Cathedral is designated in the contracts for the work, is *magister lapicida*, the " master stone-cutter " ; and I believe this was the usual Latin term throughout the Middle Ages. The architect of the fourteenth century portions of Notre-Dame, Paris, is styled in French simply *premier masson*.")

" If the reader will think over this statement carefully he will find that it is indeed true, and a key to many things. The fact is, there are only two fine arts possible to the human race, sculpture and painting. What we call architecture is only the association of these in noble masses, or the placing them in fit places. All architecture other than this is, in fact, mere building."

Assuming, however, that the modern architect was represented in the Middle Ages by the master-mason, can we disprove the second fallacy, that the master-mason was an artisan rather than an artist or a professional man ? We are at once faced with the difficulty of distinguishing professional from manual work in such distant times. A recent authority has written that[81] :—

" Except in Italy, when the Renaissance was already dawning, it was impossible to distinguish between the mediæval *artist* and *artisan* ; it may truly be said that the noblest piles, like Rheims, Chartres, and Amiens, were built from top to bottom by artisans, who received artisans' wages, the master-mason generally getting the same as the master-carpenter or master-smith. It has sometimes been argued, however, that what these lacked in money they earned in high esteem ; that they were as much respected as distinguished architects are in our own day ; in support of which, we are reminded that Charles V of France stood sponsor to the son of his master-mason, Raymond du Temple, and that the boy went to the University of Orleans. (Lethaby, *Mediæval Art*, p. 256). This, however, is an exceptional case, just as modern royalty has sometimes condescended to stand sponsor to a game-keeper's or gardener's child."

This is hardly a fair or a full statement of the case. The amount of the master-mason's emoluments is difficult to determine, in view of the uncertain value of money in those days, and the mere fact that they were paid as wages proves nothing. The master-mason was paid much more than an ordinary mason, and often more than any other person employed on the building. (The modern architect often earns less in profits on a building than the builder does, and on small " jobs " he sometimes receives as little for his services as the general foreman does.) But we do know that he very frequently received perquisites and privileges that fell to no other worker on the building, and that these increased his prestige as well as his income. Thus he received furred robes of esquire's degree, shoes, allowances for horse-hire, and even grants of estates ;[82] in one single case (in addition to a good salary) " thirty-six changes of linen, seventeen loads of wood, shoes and boots as many as he might require, every month two *soldi* for meat, a quart of salt and a pound of wax."[83] One of the King's masons in 1390 was excused from serving on juries ;[84] and others were exempted from taxes. Most important of all, they were allowed to take premiums for training apprentices.[85]

There is abundant evidence that the master-mason often attained a good social position, but the case of one who became Lord Mayor of York reminds us that the same dignified office has recently been occupied by an artisan ! More important than the quality of his clothes or the exact amount of his income is the nature of his work.

It is easy to surmise why, in the Middle Ages, the directing personage on a building was a "mason," and even why his training was so largely concerned with masonry, for a mediæval building of any size consisted chiefly of masons' work. Plumbing, slating, glazing, and even carpentry were only accessory to the main structure. The architect had to master masonry above all the crafts, and it was by far the most difficult of them to understand, for every important structural problem involved in the building—the thrust of the vault, the counterpoise of the buttresses, the design of the tracery, the interpenetration of the mouldings—was a masonry problem. In an age when there were no textbooks to speak of, knowledge of such intricate questions of mechanics and geometry could only be acquired from experience based on the experiments of others.

It has been said that another difference between old and modern practice lay in the fact that the master-mason and the master-carpenter each prepared plans for their respective parts of the work.[86] It would form a fairer comparison to state that the master-mason (or " architect "), after making the main design for the building himself, assigned the detail drawings for the roof and other wooden features to the master-carpenter, just as a modern architect, after making the main design for the building himself, often assigns the detail drawings of its roof and doors to his assistant or draughtsman.

But the functions of the master-mason or architect varied in different countries and circumstances. It is noteworthy that all the nine mediæval architects mentioned by Vasari are also described as sculptors, two of them as " architect, painter, and sculptor " ; and one specially versatile person, Orgagna, adding poetry to this repertoire.[87] In another direction we find them undertaking military engineering—*e.g.*, Lorenzo Maitani (1275-1330), the *capo-maestro* of Orvieto Cathedral, also designed the fortifications of Todi ;[88] Louis IX took an architect with him to Palestine to fortify Jaffa, and afterwards entrusted him with the building of a number of churches in Paris.[89] Sir Thomas Jackson mentions[90] several English architects who also acted as contractors. In this case the architect could hardly have checked the builder's accounts, but sometimes he did so, and his relations to the official known as the " Treasurer " or " Comptroller " are vague. The explanation, given in the Architectural Publication Society's Dictionary,[91] of the functions of the various officials employed at the Palace of Westminster in 1364

[81] Coulton, *op. cit.*, p. 468.
[82] T. G. Jackson, *op. cit.*, I, pp. 267–8.
[83] Milizia, *op. cit.*, I, p. 135.
[84] Jackson, *op. cit.*, I, p. 268.
[85] R. Sturgis, *Dictionary of Architecture*, s.v. " Architect."
[86] Salzman, *op. cit.*, p. 112.
[87] Vasari, *Lives of the Artists*, I.
[88] Sturgis, *op. cit.*, *s.v.* " Maitani."
[89] Milizia, *op. cit.*, I, p. 147. [90] Jackson, *op. cit.*, I, p. 267.
[91] *s.v.* " Architect."

FIG. 6.—SKETCH BY VILLARD DE HONNECOURT (13TH CENTURY)
(See p. 583)

is quite unconvincing. Very often the name of the person who controlled the finance of the building has been preserved, whereas that of the architect has been unrecorded, with the result that the former has been credited unjustly with the design of the building.

It would extend this essay unduly if the vexed question of the Comacine masters were reopened here, or if the organisation of the building-guilds, even in England alone, were described in detail. It may be remarked, however, that building in the Middle Ages was marred by many of the difficulties that beset us to-day. The craftsmen indeed worked very long hours, and they may have had fewer causes for grumbling because their horizon was, perforce, narrow. But they worked to contract ; they were summoned to work by a church bell instead of a foreman's whistle ; they were fined for being late, for quarrelling, idling, losing their tools, and obstructing other workmen. Wyclif says[92] of certain masons that

" . . . they conspire together that no man shall take less for a day than they fix, though they should by good conscience take much less, that none of them shall do good steady work which might interfere with other men of the craft, and that none of them shall do anything but cut stone, though he might profit his master twenty pounds by one day's work in laying a wall, without harm to himself."

Rules were made to regulate working conditions, and apprenticeship lasted seven years.

The third " fallacy " mentioned at the beginning of this chapter is that mediæval architects did not use plans or drawings. It is odd that such a belief should ever have grown up, and the only explanation seems to be that lay critics who dislike the methods of modern architects have endeavoured to represent the master-masons as unlike them as possible. Of course plans were used : no building of any importance or complexity could have been erected without them ; and several plans have been preserved to this day. Plans and even detail drawings were prepared in the architect's office (known as the " trasour " or " tracyng house ") adjoining the building in progress.[93] He also prepared estimates of the cost and a detailed specification on which the contract was based.[94] The contract made by Maestro Giorgio Orsini of Sebenico in 1450 with the Anziani for their Loggia dei Mercanti was based on a preliminary design, and Orsini covenanted to[95]

" make in the fashion shown on his drawing the statues carved life-size, with the horse great and fine, and with the arms of the *comune* in the places drawn on the said paper."

The plan of the church at Caudebec is engraved on its architect's tombstone. Models too were used : thus Giotto made a model for the *campanile* at Florence, marking on it the various sculptures and decorative details.[96]

The fallacy that design was purely traditional, and that ideas were never borrowed from abroad, is disproved by a whole host of authenticated instances. The mediæval architect certainly did not reproduce bygone styles from copybooks as we do, and as architects have done from the sixteenth century onwards. But the sketchbook of Villard de Honnecourt (thirteenth century) proves conclusively

[92] Coulton, *op. cit.*, p. 491.
[93] Britton, *Architectural Antiquities*, iii, 51, etc.
[94] Numerous references cited in Salzman, *op. cit.*, p. 121.
[95] Albertini, *Cronaca Anconitana*.
[96] Vasari, *op. cit.*

that this remarkable man travelled abroad in search of "inspiration," and that he sketched the plan and details of Rheims Cathedral with a view to reproducing them in the then unfinished church in his native town of Cambrai. Under a sketch of a window he has written :—

"Here is one of the windows of Rheims Cathedral such as are placed in each bay of the nave between each pair of pillars. I was proceeding to Hungary on professional business when I drew this, because it pleased me best of all windows."

Indeed, his little leather-bound book, preserved in the Bibliothèque Nationale at Paris, is one of the most valuable relics of the Middle Ages ; 33 of its original leaves remain, and on them are drawn 63 subjects, of which 35 represent figures and grotesques, 16 plans and details of architecture, 5 details of carpentry and masonry and geometry, and the remainder are miscellaneous. They are records of extensive travels in France, Germany, Switzerland, and Hungary, and in some cases are quite obviously sketches of features that seemed to him likely to "come in useful" in his practice at home. They prove, first of all, that he was an excellent draughtsman, not only of masonry details, as one would expect, but also of the human figure and of ornamental work. There is one beautiful freehand sketch of a carved wooden bench-end that the most skilful modern draughtsman might be proud to own. The plans of cathedrals show all the lines of the vaulting, besides the walls and windows. Some of the diagrams of masonry display an intimate knowledge of geometry, and notes in writing on some of the plans indicate clearly that he was studying architecture and ornament with a view to utilising it for buildings on which he was actually engaged or hoped to be engaged. It proves without doubt that the only mediæval architect of whom we have so full a record was an accomplished draughtsman, a traveller, a student, and a man of wide artistic sympathies, in addition to being a competent master of stonecraft. It establishes the fact that the master-mason of the Middle Ages was the counterpart of the professional architect of to-day.[97]

Nor is this our only evidence. Assuming that the architect or master-mason of Westminster Abbey was not a Frenchman (and this Professor Lethaby seems to have effectually decided), at all events it is probable that he borrowed features from contemporary French architecture ;[98] while at Canterbury, long before, a French architect, William of Sens, was imported to design the new cathedral on the strength of the reputation that he had made for himself as an architect in his native land.[99] Other master-masons were sent by their employers to sketch and borrow features from celebrated churches for use in their own buildings.

The fifth fallacy, that the mediæval masons were content to work for the glory of God alone, is probably due to the exaggerations of monkish chroniclers. A recent writer[100] has partially exploded this belief by stating that "It is astonishing how few mediæval documents testify directly to the artist's love of his work." The mediæval craftsman had no newspapers or "class-consciousness" to make him discontented ; none the less he was a human being, with the usual failings of his kind.

The next misapprehension is that the architect was either a monk or a lay-brother attached to a monastery. In some cases he certainly was, but as often as not he was a layman, and was therefore ignored by clerical historians. The king's masons, for instance, were all laymen ;[101] and so also in many other instances. In a list of 137 Spanish architects, sculptors, and builders, from 1129 onwards, Street says[102] that nearly all were laymen and in independent practice. A typical example of the readiness of critics to style a cleric an "architect" occurs in the case of St. Hugh of Lincoln, of whom the chronicler merely says[103] :—

"With wondrous skill he built [*construit*] the fabric of the Cathedral ; whereunto he supplied not only his own wealth, but even the sweat of his own brow ; for he oftentimes bore the hod-load of hewn stone or of building lime."

Can any cautious reader accept this as authentic evidence that St. Hugh actually designed Lincoln Cathedral, as he is often credited with doing ? But let us award honour where it is due : the monasteries not only encouraged and practised admirable architecture throughout the Middle Ages, but they were largely responsible for the training even of those laymen who carried on what we call "private practice" in later life. Education was so much in their hands that it would be churlish to minimise or deny the debt that we, as architects, owe to them.

This brings us to our seventh "fallacy," that the architect learned his craft at a bench, not in a school or an office. A large part of his work being masonry, he would naturally have to acquire an extensive practical knowledge of that craft at the bench, but we may also assume he studied geometry in the "tracyng house" or in the monastery cloister. If Villard de Honnecourt is at all typical of his time, we can safely infer that, either in the monastery or under some able lay architect, he became a talented draughtsman of figures and ornament, and that he was also well versed in geometry and mechanics. He was a well-educated man, according to mediæval standards, understood Latin, and could write neatly. We may even infer that an architectural student of those days was expected to travel and sketch, so far as circumstances then permitted.

The eighth point to be discussed relates to the common belief that the architect worked on only one "job" at a time, and resided on or near the building until it was completed. That fallacy also contains a measure of truth ; but, on the other hand, it does not apply universally. A modern general practice would be impossible without the post, the telephone and modern transport facilities. Mediæval conditions therefore favoured the appointment of a resident architect, but there are many instances of men who undertook several commissions simultaneously, and of others who acted as consultants or specialists. Thus the architects of the great fan-vaults at Windsor

[97] For a critical edition of the sketchbook in English see M. J. Quicherat, *Facsimile of the Sketchbook of Villard de Honnecourt* ("Wilars de Honecourt"). (London, 1859.)
[98] T. G. Jackson, *op. cit.*, I, p. 272.
[99] *Archeologia*, XLIII, 81.
[100] Coulton, *op. cit.*, p. 466.
[101] Jackson, *op. cit.*, I, p. 267.
[102] G. E. Street, *Gothic Architecture in Spain*, chap. xxi. (London, 1865.)
[103] Quoted in Coulton, *op. cit.*, p. 472.

and Westminster were appointed because of the reputation that they had acquired at Bath.[104] Lorenzo Maitani was appointed master-builder at Orvieto in 1310, but remained in Siena, his native place, and did not move to Orvieto till 20 years later, when the cathedral must have been far

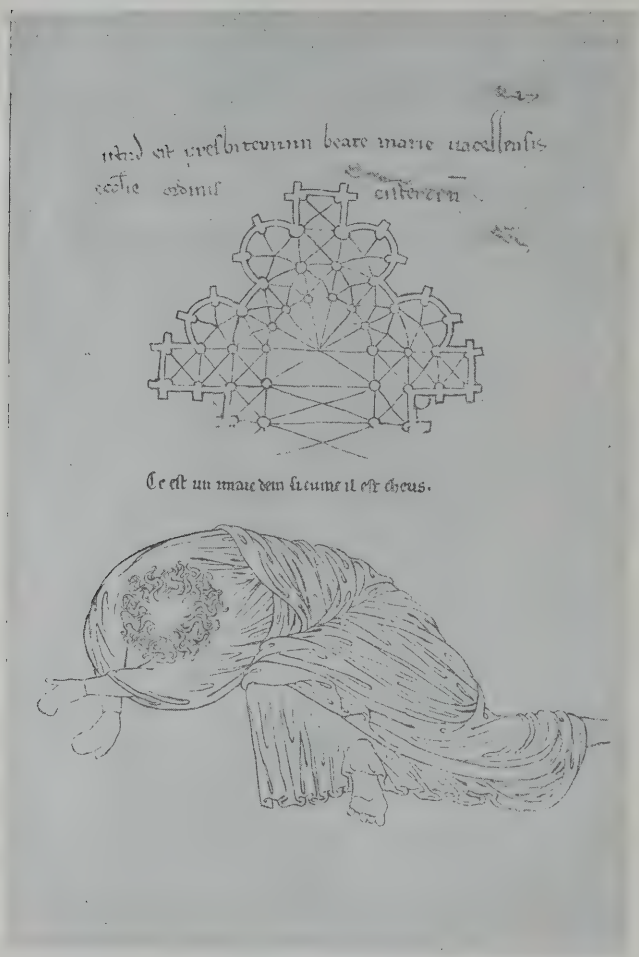


FIG. 7.—A PAGE FROM THE SKETCHBOOK OF VILLARD DE HONNECOURT (13TH CENTURY)
(See p. 583)

advanced, having carried out work at Perugia, Todi and Siena in the meantime.[105] In 1499 Martin de Chambiges was called to Paris as a consultant by Jean de Soissons, who paid him a fee for advice on the façade of the cathedral at Troyes.[106] The architect of Salisbury spire was paid a regular salary for his work there, though at the time of his appointment he was already engaged on work at Bath and Reading.[107] Then there were itinerant architects, who, as a thirteenth-century epitaph found in a ruined church in Hungary goes to prove . . . "under the modest title of stone-carvers or masons, carried all over Europe the methods (*procédés*) of the new architecture found in France in the thirteenth century."[108]

Lastly, we come to the popular superstition that the mediæval architect gloried in his anonymity. Assuming that he was human, we may imagine that he welcomed anonymity no more than does a famous practitioner of to-day who, turning to his newspaper the day after some great building of his has been opened, finds his own name omitted, though the Lord Mayor's speech is printed verbatim, the "dresses" are fully described, and a large photograph shows the Alderman's youngest presenting a bouquet. The anonymity of the mediæval architect is chiefly due to the jealousy of the mediæval scribe. But, in fact, the number of cases in which his identity has been revealed is far greater than is supposed. There are several hundred instances in documentary records, a few more where the architect has carved his name on some part of the building, and others again where his tombstone preserves his original epitaph.[109]

In closing this brief study of his personality, it may be repeated that an attempt has been made to restore to him some of the credit that is his due. If, in qualifying certain of the assertions made by prejudiced or careless writers, some of the attractive mystery that surrounds him has been removed, nothing can dispel the grandeur of his achievements. An age when architect and craftsmen worked in such close union that their identity is almost indistinguishable has a lesson for us to-day, and their buildings remain as an inspiration to us for all time.

. . . .

[In a recent book on Saracenic architecture, there are several references to Muhammadan architects and craftsmen in the Middle Ages. It appears that the chief difference between Eastern and Western architects is to be found in the merciless severity with which the former were often treated by despotic tyrants; thus, of one architect it is related that a sultan cut off his hand when he had completed a magnificent mosque, to ensure that he should never design another to excel it. Beyond these sometimes revolting and sometimes amusing stories, we learn that the Saracen architects were keenly interested in geometry and its application to building; that they were often Christians imported into Egypt for their skill; that their names were only occasionally preserved; and that the prince or emir who financed the building was frequently credited with its design.[110]]

[104] Jackson, *op. cit.*, II, p. 110.
[105] R. Sturgis, *op. cit.*, *s.v.* "Architect."
[106] Jackson, *Renaissance of Roman Architecture: France*, p. 75.
[107] Dodsworth, *Salisbury Cathedral.*
[108] J. E. J. Quicherat, *Mélanges d'archéologie*, II, p. 302. (Paris, 1885.)
[109] Jackson, *op. cit.*, I, 265-267; Salzman, *op. cit.*, pp. 108-112; Félibien, *op. cit.*, pp. 205-6, 207, 208, 209, 226, 227.
[110] M. S. Briggs, *Muhammadan Architecture in Egypt and Palestine* (1924), pp. 51, 56, 89, 92, 93, 107.

(To be continued)

Mural Painting*

BY J. D. BATTEN

MY first task and pleasure is to thank the Royal Institute of British Architects for the honour that they have done me and for the opportunity which they have given me of saying, on this occasion, some things that I have wanted to say.

My second task and equal pleasure is, on behalf of the Society of Mural Decorators and Painters in Tempera,† to thank the Institute for the opportunity afforded of holding under such happy conditions some kind of exhibition of the work of our Members.

I say "some kind of exhibition," for we are supposed to be *mural* decorators, and are met by the same difficulty which occurred to Snout in "Midsummer Night's Dream":—

"You can never bring in a wall, what say you Bottom?"

To which Bottom replies: "Some man or other must present wall; and let him have some plaster, or some loam, or some rough-cast about him to signify wall."

The architects will sympathise for they are in like case. Neither they nor we can do more than show preliminary drawings or subsequent records of the objects of our craft.

I hope that those of you who are not architects will bear this in mind if you should be tempted to disparage our little show in comparison with an exhibition of completed objects of art which will shortly open in another place.

It cannot be a greater astonishment to you than it is to me that *I* should have been asked to give this lecture on Mural Painting—I, who (excepted one early attempt and failure) have never done a mural painting of decorative intention in my life.

I have painted on canvas marouflé on to a wall, but that is not the game; I have painted on honest plaster and put it in a frame and sent it to the Royal Academy, but that is not the game; I have laid plaster on a stable wall and painted upon that, and that *is* the game as far as technique is concerned, but it had no *decorative intention*, for the best decoration of a stable wall is a coat of lime-wash.

But I have studied the subject and tried to make myself competent in case any job should ever come along, and now—as far as I am concerned—it is too late, and the best that I can do is to urge those who are young to a more resolute and sustained effort, and to urge Municipal and Educational bodies to try to be more helpful and, above all, to give their help more promptly and earlier.

If this experience of mine were an individual or exceptional case it would be nothing to make a song about; but I am convinced that, so far from being exceptional, it is (but for the last clause) a common and general experience, and it is quite possible that among you who are listening to me may be artists who have always wished for an opportunity of mural painting, who have felt themselves not unqualified for such a task, who have believed that it would enable them to express better than by any other means the best things that are in them, but who not only have never had a chance but who, straining their eyes to the horizon, cannot see the least glimpse of any chance approaching.

If this be so, I think that I cannot better utilise the opportunity which has been so generously given me, than in considering, first, how this unhappy state of affairs has come about, and second, by what means it can be amended.

I believe that the present neglect of mural painting is largely due to a reaction from the splendid hopes which heralded the decoration of the Houses of Parliament. I cannot better show you the light in which these hopes were held than by quoting from the introduction of a valuable little book published in 1846:—

"The moment it was determined to decorate the new House of Parliament with fresco paintings, it became important to ascertain the mode adopted by the great masters of the Italian and Spanish Schools.

"There appear to me to be certain analogies between Italy during the period the fine arts flourished in that country and England at the present time. The same wealth and splendour of our nobles and merchants, the same commercial prosperity, and above all the same spirit of inquiry which characterised Italy at the period I have mentioned, is applicable to England at the present moment. The advantage is on the side of England.

"We must expect that the introduction of the art will be opposed and condemned by many of those who love the arts and to whom we are much indebted for their advancement, but who have grown grey in other practice. It is too much to expect otherwise. But the young artist may be assured that fresco painting will succeed and be most extensively practised in this country. The commencement has been most auspicious. The patronage of the Government has been offered. The assistance of Parliament has been obtained. With such encouragement and patronage, ability and genius will not be wanting. No opposition can now prevent its success. The die is cast; the path will be trodden."

And this is Mrs. Merrifield, a lady of habitually sound judgment and measured words, an unwearied student of the technology of painting, to whose researches we are to this day indebted. It is evident that she is carried away by the enthusiasm of the time.

These high hopes were not fulfilled.

Our present need is to be reminded that the paintings in the Palace of Westminster by no means constitute a consecutive record of failure.

Confession of fault is a healthy spiritual symptom, and in England at any rate, generation after generation, there has never been wanting a due supply of men who have found a vocation, and even a sanctified pleasure, in confessing our sins on our behalf.

And so it has come about that failure has been advertised, and as to success—Have any of you ever heard a hint or whisper of it?

* The last of the series of lectures on Architecture and the Crafts, delivered at the R.I.B.A. Galleries on 30 April.

† A Volume of Selected Papers of the Society of Mural Decorators and Painters in Tempera, 1907–1924, edited by Mr. Batten, has just been issued. The volume can be ordered, or a prospectus can be obtained from Miss Lanchester, Hon. Sec., Chelwood Gate, East Grinstead.

And yet in the Palace of Westminster there are paintings which have not failed. In the Peers' Robing Room there is the huge painting of Moses with the Tables of the Law. If you can put on one side any misgiving as to whether so pictorial a design, carried to the very limits of the wall be a sound decorative treatment of the wall, and concentrate your mind on the more technical aspects of the work, the qualities of colour and surface, I think that in all fairness you will not be able to withhold an intellectual tribute to the consistent effort by which the work attained its accomplishment, and that you will acknowledge the sound craftsmanship of a painting which for fifty years or more has stood unchanged, though exposed to an atmosphere into which (so they say) a million tons of sulphuric acid is vomited each year.

(Fifty years, of course, falls far short of the age of the painting, but I put it at that because I do not know the date at which Sir Arthur Church coated it with ceresin wax, after which, so far as the permanence of water glass painting is concerned, it ceases to be *evidence*.)

And while you are in the Peers' Robing Room, I would beg you to turn from the " Moses " painted on the wall itself to the " Daniel " painted by the same artist on canvas marouflé to the adjoining wall. You will be brought face to face with a contrast more instructive and convincing than any words of mine can be. The " Moses" is water-glass painting. It establishes a record not to be forgotten.

There is also one fresco painting which, according to Sir Arthur Church's admission, has withstood for a like number of years a like vitriolic exposure. In truth there are quite a number of fresco paintings the damage to which has been slight and easily reparable. Others there were that had perished so completely that the paint could be flicked from the wall by the charwoman's duster.

What is the lesson of it all ?

If under identical conditions the work of one man has stood and the work of another man has perished, does it not mean that one man did his work in the right way and the other in the wrong, and can the incentive to us be anything other than to find out the right way and follow it, or to find out the wrong way and avoid it ? Is all mural painting in England to be brought to a standstill until a foolproof method of painting has been invented ?

As to painting on canvas and sticking it on to the wall, it is not a solution of the problem, it is an evasion of it. Nowadays, the fact to be faced is this :—The people who would have to pay for mural painting do not believe in it.

Let me picture to you a state of things as it might be, and as I think, to some extent, it ought to be.

Here is the master of a Municipal Art School. To him enters a deputation from a church—a churchwarden or two, and possibly the vicar. The churchwarden explains : A sum of money has been given for the purpose of decorating a chapel in the church, preferably by mural painting. They have had their attention called to the work of a young artist named Smith. One of them had been very much impressed by a picture of Smith's in last year's Exhibition at the Municipal Art Gallery, and had almost thought of buying it. On his recommendation a few of them had gone to Smith's studio and had seen not only this particular picture, but a number of others (still unsold) which some of them liked even better. On the strength of this they had ventured to ask Mr. Smith if, when he was next passing that way, he would look in (the church was always open), and for a few moments glance at the chapel, and then, if he felt inclined, make a rough sketch, on a half sheet of notepaper, of any kind of decoration which he might suggest.

Mr. Smith had gone further than they had intended, for he had evidently made a careful measurement of the whole chapel and had sent them a detailed design of a complete scheme of painted decoration, and in all fairness they felt bound to say they admired it very much. There were no two opinions among them on that point, but one of the committee—a gentleman of considerable influence in the church—had said : " This is all very pretty, but it is not the least use putting paintings on a wall in this climate of ours, for in a few years it will all come tumbling off again, just as it did at St. Somebody's in the next parish."

When this was reported to Smith, he said : " If you will go to the Art School where I was trained I am sure the Master will be only too pleased to show you a bit of mural painting which I did five years ago, and you can see for yourselves whether it has come tumbling off the wall or not."

" That is quite true. Smith was with us three and a half years, and if you don't mind coming out in the backyard, I will show you a bit of mural painting which Smith did at the end of his first year. You must take no account of the design ; it was scarcely his, it was a task which was set him.

" Thomas, fetch a pail of water and soap and a distemper brush."

" The paint seems safe enough."

" Yes, but there is another point upon which we want some assurance. Our church was built about 50 years ago, and the interior walls of the chapel, as of the rest of the church, are just plain brickwork. No doubt it will have to be plastered before any painting can be begun, and we are told that everything depends on using the right kind of plaster."

" That is very true, but you need have no anxiety on that point. Smith did the whole of the example which you have seen, with his own hand, plastering as well as painting, from the brickwork outwards ; so unless he has forgotten what he knew at school, you can safely rely on his advice."

On such a testimony as that, I think Smith will get the job ; but on any less testimony I do not think he will, and I confess, I do not see why he should.

A point which I would earnestly press on educational authorities is that such instruction as I have indicated should be given, not at the end of a student's time at school, but quite early.

I have allowed Smith to appeal to a sample of his work done five years ago, but that is cutting it very short. If his trial piece were done at the very end of his school time, it would mean that an interval of at least five years would have to intervene between his school career and the time when he could put in a claim supported by presentable evidence to be entrusted with mural painting destined to be permanent.

An interval of two years is all to the good, but the result of a prolonged delay has sometimes been that the courage of youth is broken and its finer impulses dissipated.

My notion is that the crafts subservient to painting, that is to say, the priming of panels and canvases and the plastering of walls, might well be taught on alternative mornings with the first drawing from the life.

In all such teaching, a study of the methods of the past is of inestimable value.

That brings me to the difficult part of my lecture, a place where I feel myself to be at variance with an established habit of thought, in conflict almost with a false religion, a misreading of Man's life in relation to Time ; I do not mean Time in its small divisions of minutes and years, but Time in its larger spaces, decades, centuries, millenniums.

We say, " Ah, but that was in the sixteenth century and this is the twentieth," and feel that we have made a significant statement. We imply that there is a great gulf fixed between man then and now, between his thoughts and affections and our thoughts and affections, and we allow this mismeasurement of the soul of man to react upon our understanding of his art.

We amuse ourselves, and also deceive ourselves, by talking in terms of evolution. It is altogether out of scale. Evolution counts in hundreds of thousands and millions of years, and the centuries are less than the tick of a watch.

I think it has come about because our education has been so much reading and so little handling. Words have changed. Even within the limits of a common language, and the space of a few hundred years, some words have completely reversed their meaning. We have pushed words into the foreground of our perspective and have forgotten that the nature of things has not changed.

Gold was as malleable 5,000 years ago as it is to-day, stone had the same weight and density, lime the same setting and plasticity ; and the malleability of the gold, the firmness of the stone, the plasticity of the lime provoke the craftsman to the same exercises then and now. " *Art's not Time's fool.*" Forgive the parody.

There is a brotherhood between the craftsmen of all ages, and we ought to feel and claim this brotherhood and not allow the centuries to estrange us. *They are the least of the things that divide men.*

Instead of this we find ourselves reluctant, even a little ashamed, to seek help from the knowledge of the past. We think of it as retrograde, a treason to those who are going forward, forgetful that in reaching out to all-encircling truth there is neither backward nor forward, right hand nor left.

We have a great heritage of knowledge from the past, and in a way we are proud of our wealth, but we let it lie on deposit at less than bank rate. It is very wasteful.

Or to drop that metaphor and pick up another : Just as we have museums in which we store the treasures of the past, so we build museums in our minds, in which we store such knowledge, as it were an object of antiquarian interest. We do not make it part of the plant of our workshop.

As I see it, there are three ancient methods of mural painting, and there is one modern method, and there is plenty of room for the invention of more modern methods to cope with the vitiated atmosphere of our cities.

The modern method is water-glass ; the three ancient methods are fresco, tempera and encaustic.

In Crete, as far back as research has gone, there was fresco painting.

In Egypt, as far back as research has gone, there was tempera painting.

In Greece, a long way back, I do not know how far, there was encaustic.

[In Greece there are also examples of fresco painting, but they are so obviously the work of Minoan artists that they may be counted as belonging to Crete.]

Each of these ancient methods of painting may be as serviceable to us to-day as it was to those ancient nations.

The one that interests me most is fresco painting, and my argument is that the way in which the Minoans mixed their plaster and laid on their paint is a concern not of 4,000 years ago, but of to-day and of to-morrow.

In Crete three or four thousand years ago, fresco painting was an established craft. Fragments of these frescoes have been found in plenty. Wherever they have escaped the action of fire (for the Palace of Minos was not only sacked, but burnt) the painting is found undecayed and firmly adhering to the imperishable plaster.

This Minoan plaster is therefore well worthy of our examination. In one characteristic it differs not only from any plaster used to-day, but, as far as I can learn, from any plaster used elsewhere or at any other period.

In order to make this clear, I have first to explain to those of you who are neither builders, plasterers, architects nor engineers, an anomaly of the plasterer's vocabulary.

If you were making a pudding or such-like thing, and had collected all the materials for your pudding in one place, then—if you cared to use long words—you might appropriately call the whole of the stuff so collected the *aggregate*.

But in plastering that is not so. If you mix lime and sand together to make mortar—lime is lime and sand is " aggregate." Indeed, anything you mix with the lime is " aggregate," whether it be sand, broken marble, or pounded bricks.

Using the word " aggregate " in this absurd but thoroughly accepted sense, the peculiarity of the Knossos plaster is that it contains no aggregate.

This is a discovery so surprising that some experienced plasterers have found it incredible. None the less, I think that the result of the chemical and microscopic examination which has been made, admits of no other reading.

At Tiryns a later form of Minoan plaster was examined by Mr. Noel Heaton, and found to have an aggregate of powdered limestone.

Plaster described by Vitruvius has three coats of lime and sand, and over that three coats of lime and marble dust.

Marble dust has disappeared from the fresco plaster described by Cennini (1400), it is simply lime and sand.

A plaster of lime and marble dust appears again as a

rediscovery by Raphael and his friends ; * but their interest in it was, I think, more as a stucco for modelling than as a plaster surface for painting.

To-day plaster is, or should be, lime and sand. Unfortunately, so little care is given to the washing of the sand that the plaster for all but the last coat may be more truly described as lime and mud and sand. As the mud has no great coherence it is sometimes strung together by cow-hair. It would seem that the progress of the plasterer's craft for the last thirty centuries has been pretty uniformly in one direction.

I make no apology for speaking of plaster when I had promised to speak of painting. In mural painting the plaster and the pigment are both essential materials of the same craft, and, in any case, your painting can never be sounder than your plaster.

Not long since I had a conversation with a plasterer, a man, I suppose, of my own age. I have made no attempt to verify what he told me, but I do not think he was pulling my leg, and his narrative seemed to me to have in it an unhappy likelihood of truth.

I had been watching him knocking up some lime putty (putty is the plasterer's name for mature slaked lime, it has nothing to do with glazier's putty). He was doing it in a way unfamiliar to me. The putty was stiff—stiff as cheese. He began knocking it up with a hammer instead of with a trowel ; he used the trowel later. But under whichever tool, the lime putty behaved as it always does. The same little miracle happened, only it needed more work than usual. Without any addition of water, the stiff cheese softened to a sloppy cream and it took a surprising quantity of dry sand to make it resume sufficient firmness to lay as plaster on the wall.

I said, " In early days you used to have a boy to do that for you."

" Oh, a hawk-boy, you mean ; there haven't been any hawk-boys since Broad Street Station was built."

I asked what Broad Street Station had to do with it.

" That was when the hawk-boys came out on strike. Before that all the plasterers had hawk-boys, who used to knock up the stuff for them. The boy was often allowed to do a bit of plain plastering himself. If he were a sharp boy he might soon learn to do the job as well as the plasterer. So when there was any dispute between a plasterer and his employer, any asking for more wages or better conditions, the reply was always the same, ' You can go if you like. There are plenty of boys ready to take your place.' So there was always an ill-feeling between the plasterers and the boys ; the boys could do nothing right.

" Then in the year when Broad Street Station was a-building, the hawk-boys came out on strike, the whole lot of them. The employers turned to the plasterers and said, ' Can you get on without the boys ? ' and the plasterers, with one voice, replied, ' Boys are more trouble than they are worth.' "

What became of the boys I do not know. Whether they took to selling newspapers, blacking boots or picking pockets. In any case, the best and almost the only way of becoming skilled craftsmen was closed to them.

And all the while it was not true that the plasterer could get on just as well without the boy.

Knocking up is hard work and takes time, and if the plasterer does it himself and does it thoroughly it will delay his job, he will be counted a slow worker, unprofitable to his employer. The remedy, however, is easy. Add a little water to the putty and it scarcely needs knocking up ; you can stir it up with the trowel. It goes on the wall swiftly and sweetly, and if a few weeks later the whole surface is reticulated with little cracks—well, what is the wall-paper for ?

But to us, who wish to paint upon that wall, the wall-paper solution of the problem is not convincing.

That brings me near the end of what I have to say.

At the beginning of my lecture I referred to the complete lack of opportunity for mural painting in England at the present day. So far I think we were all of us found to be in a state of painful unanimity.

I then made search of the causes of this unhappy state. I indicated one of them. I recognise that disappointment at a measure of failure in the painting at Westminster is not of itself a sufficient explanation of the present complete collapse of hope and effort towards mural painting There must be other reasons—I have only spoken of the one that seemed obvious to me.

My repudiation of painted canvas stuck to a wall, as a solution of the problem of mural painting, has necessarily brought me in conflict with the opinion of men whose art I sincerely admire. I should not have to go outside England to point to paintings of surpassing beauty executed in this manner ; work which has every artistic virtue, except, if I may so put it, *an apprehension of the job*.

I then came to the practical question. What can we do to bring about a better state of things ? The reforms which I have suggested are two.

The first reform which I advocate is that in connection with Art Schools—*but not only in connection with Art Schools*—there should be established places where, on a convenient wall space, a painter may do a sample piece of work which shall remain as a record of his ability and mastery of his materials and as a voucher of the durability of the method he has employed, and that such evidence shall be accessible to all who may wish to inform themselves of these matters.

The second reform is the reinstatement of the hawk-boys in the plastering trade, not necessarily in the same form which existed before the disastrous strike (which evidently had its own inherent weakness), but some arrangement whereby a boy working under a skilled plasterer and being of actual service to him may acquire that mastery of the craft which can hardly be attained by any other means, so that, at no distant date, a generation of plasterers may arise who may claim, and claim without boasting, that their craft is by no means the least skilled among the skilled crafts of the building trade.

* Giovanni da Udine and Guilio Romano.

Mr. Topham Forrest's Report on American Buildings and Building Laws

BY H. AUSTEN HALL [*F.*]

MR. TOPHAM FORREST visited the United States last year on behalf of the London County Council, who asked him to study the construction and control of buildings in the States, and his report on this large subject has just been published, together with some important recommendations relating to the London Building Act.

The Report itself is a considerable volume of more than 100 pages, and is profusely illustrated with diagrams and plans. The main headings are divided as follows :—

1. General Building Regulations.
2. Building control as regards means of escape in case of fire.
3. Concrete, reinforced concrete and steel frame construction.
4. Town planning and zoning.
5. State and City Art Commissions.
6. Housing.
7. Educational buildings.
8. Summary and conclusion.

It is reassuring to find that a comparison between the Building Laws governing London and New York is not by any means a disparagement of our Building Act. There are distinct advantages enjoyed by us in some cases, and an exhaustive comparison of the Building Regulations results in recommendations of which only two are important. These have reference to the height of buildings and the administration of the Building Act. In New York the authority is vested in a Board of Aldermen who have power to revise, and do revise, the Building Code at frequent intervals, thus keeping up to date with new methods of construction. The earliest regulations now in operation in New York are no older than 1915, while the most recent zoning laws date from 1924.

The advantages of municipal rather than parliamentary control are obvious, and if adopted here would mean that by-laws would take the place of Acts of Parliament, with the corresponding increase in flexibility.

The other important recommendation is that the height of buildings should be increased, on wide streets or facing open spaces, to 120 feet. This is a very great advance on the existing regulations, and one that will, if adopted, have far-reaching effects on the design of buildings in London, and will give a much-needed stimulus to many building operations which are hampered by the present restrictions.

Those who oppose higher buildings will be reassured by the recommendation that they shall only be permitted under favourable conditions of light and air.

In comparing the procedure as to means of escape in case of fire, the advantage is with the London method, which takes each case on its merits and prescribes rules for the individual building concerned. In America the tendency is to fix definite rules which must be adhered to in all cases. The very helpful attitude taken by the Architect's Department in this matter is common knowledge, and we have the advantage of individual consideration for each case, and a remarkable ease of access to the officials of the Council who are concerned. The regulations affecting the means of escape from theatres are altogether better in London than in New York.

Mr. Topham Forrest outlines a zoning scheme for London which must appeal forcefully to everyone interested in town planning in all its aspects. Among the advantages to be derived from zoning is that the building regulations may be varied in different parts of a city according to the class of building permitted, and we should be spared the necessity of applying, as at present, the same rules to the suburbs and the City.

The Art Commissions of America are doing a splendid work in safeguarding the appearance of the towns in all matters of importance. There is evidence of the control that is being exercised in this direction, and one is left to draw one's own conclusions as to its bearing on our affairs.

Housing in the States is dealt with at great length, and although the high standard of living affects the size and number of the rooms, in other respects there is nothing to be said to the disadvantage of London. The recommendations that the Council shall erect wooden houses on their new estates, and also blocks nine storeys high in the congested areas, are welcome suggestions of progress in meeting the urgency of the matter along the right lines.

The report reveals the Superintending Architect as a man susceptible to new ideas, and with the courage necessary to suggest changes which must draw a good deal of criticism from some quarters.

The London County Council is to be congratulated on their action in sending their architect to study conditions in America, and it is to be hoped that Mr. Topham Forrest's recommendations will receive the earnest attention they deserve, not only from the members of the County Council, but from all his brother architects.

Overcrowding of the Architectural Profession

REPORT OF THE JOINT COMMITTEE OF THE R.I.B.A. AND THE ASSOCIATION OF ARCHITECTS, SURVEYORS AND TECHNICAL ASSISTANTS

To the President and Council of the R.I.B.A.

The Joint Committee set up by the Council of the R.I.B.A. and the Architects' and Surveyors' Assistants' Professional Union (now the Association of Architects, Surveyors, and Technical Assistants) have held four meetings and have carefully considered their Reference, which was as follows :—

"That the Council set up a small joint Committee of six to examine and report within six months upon the alleged overcrowding of the profession. The Board of Architectural Education and the A.S.A.P.U. to be asked to give this Committee all the information and statistics they possess as to numbers of students in schools, pupils in offices, entrants for R.I.B.A. Examinations, etc., and generally assist in the inquiry."

The Joint Committee was constituted as follows :—

Mr. Maurice Webb
Mr. Arthur Keen } representing the R.I.B.A.
Mr. Francis Jones

Mr. Charles McLachlan
Mr. F. R. Jelley } representing the A.A.S.T.A.
Mr. J. W. Denington

From the statistics and other information carefully collated and placed at our disposal by the R.I.B.A. and the A.A.S.T.A., we beg to report that we have reached the following conclusions:

1. That there are to-day some *12,000 architects, including 1,300 pupils and students in England and Wales, as against 7,000 forty years ago. These figures are obtained from the census returns, and represent an increase of 70·65 per cent.

The population of England and Wales has increased from twenty-six millions to thirty-eight millions during the same period, representing an increase of 46·15 per cent.

In other words there is to-day one architect or potential architect to every 3,167 of population in England and Wales, compared with one to 3,714 forty years ago.

2. It appears, therefore, that the number of architects who describe themselves as such in the census returns has risen in a greater proportion than the population during the past forty years.

3. Approximately four hundred would-be architects are now being trained in schools providing whole-time courses. So far as can be ascertained there are nine hundred pupils or learners in offices, and of this number about one hundred are taking part-time courses in a recognised school of architecture.

This means that there are about 1,300 youths to-day in training for the profession.

These figures do not include the comparatively large number of persons who enter the Profession irregularly or accidentally by promotion from the office-boy or clerical grades.

4. If three and a half years be taken as the average period of training before wage-earning begins, it will be seen that some four hundred young architects presumably enter the profession every year. Of this number three hundred have been pupils and one hundred have undergone whole-time training in the recognised schools.

5. If the average professional life of an architect be taken as thirty† years, it follows, that sufficient men are being trained to maintain the total numerical strength of the profession at 12,000. This does not allow for wastage, which will probably account for the difference between this figure and that of the 10,700 architects who are earning a living to-day as professional men.

6. Admitting that these figures are incapable of absolute proof, the Joint Committee feel that at least as many men are entering the Profession as the Profession can at the present time absorb, and are of opinion that steps should be taken, not to limit the numbers entering the Profession, but to warn the Profession and the public of this fact, and to ensure that the training given to students wishing to become architects is thoroughly adequate.

7. From the evidence available, of which the salient parts have been quoted above, and from the evidence of those responsible for the keeping of employment registers, the Committee believe that there is no overcrowding so far as the highly-trained, competent man is concerned. But they believe also that there is a surplus of indifferently trained persons, especially amongst the junior grades.

8. Finally, we consider that the utmost importance attaches to the following points, which we believe should be widely circulated to the Profession :—

(A) Overcrowding not caused by the Schools.—The figures which we have examined prove beyond question that the Recognised Architectural Schools are in no way contributing to the overcrowding of the Profession. Owing to their lengthy courses and to the cost of maintaining a school student away from home, the tendency is, if anything, the other way. As an illustration of this opinion it may be mentioned that in the districts where the pupilage system still survives, namely, everywhere, except in London and Liverpool, there are only some twenty-five whole-time students per annum who are passing through the schools.

We therefore recommend—

(*i*) *That the Board of Architectural Education be requested to get into touch with all unrecognised schools, art schools and polytechnics with a view to the improvement of the architectural courses at such schools.*

(*ii*) *That letters be addressed to Headmasters of all public and secondary schools, to the Association of Headmasters and to all Education Authorities setting forth the method of entry into the Architectural Profession.*

(B) Training and Maintenance.—*Architects in practice should be reminded of the unfairness of taking a boy into an office in a junior capacity without making adequate arrangements for his education and training if he shows a bent for architecture.*

In this connection the Committee desire to record their whole-hearted support of the present proposals of the Board of Architectural Education for the establishment of Maintenance Scholarships, which they consider will be invaluable as a means of encouraging the growth of whole-time training.

(C) Casualisation of Employment.—There is a growing tendency to casualise employment in Architects' Offices. Assistants are engaged for special work for a few months only, and are then cast aside to swell the employment registers. *We recommend that private practitioners should be urged to avoid short-term employment of assistants wherever possible, and to remember the evils in the building and other industries of which casual labour has been the cause.*

(D) Interchange of Assistants.—It is suggested that by local co-operation more particularly between the Allied

* This figure does not include 647 temporary Architectural Draughtsmen in the Civil Service who were returned in the Census as Civil Servants.

† This figure is somewhat conjectural, but the Committee believe, in the absence of accurate information, which they made every effort to obtain, that it is a reasonable average.

Societies and the branches of the A.A.S.T.A., some system of interchange of assistants between offices might relieve the present difficulties of casual labour.

We recommend that the Allied Societies be urged to elaborate some such system as this.

We also recommend that students, on termination of their pupilage, be recommended for and aided to obtain employment, if possible in some town where he can obtain useful experience and further professional tuition in some good evening school.

(E) Temporary Official Staffs.—Government Departments and Municipal Authorities are particularly prone to the engagement of temporary staffs, a practice from which many cases of extreme hardship have resulted and will result. For example, at the present time the War Office, the Admiralty, H.M. Office of Works, the Board of Trade, the Air Ministry, the Ministry of Transport, the Ministry of Health and the Post Office employ 647 temporary and unestablished draughtsmen.

If the system cannot altogether be avoided, these Authorities should be urged to alleviate the hardships which it entails.

(F) Education of Pupils and Assistants.—*We recommend that all Architects' Assistants who have not passed the R.I.B.A. Examinations should be urged to do so.*

We also recommend that no articled pupils should be accepted in an Architects' Office under the age of 17 years, and unless they possess qualifications of the standard required for Probationership of the R.I.B.A. or for entrance to a recognised School of Architecture.

We also suggest in this connection that the Board of Architectural Education should be invited to consider whether it is not possible to provide some kind of training syllabus for the use and guidance of Architects who take in pupils. This suggestion applies particularly to districts where school education is not easily attainable.

(G) Indentures.—*We recommend the Council of the R.I.B.A. to resist the practice of incorporating in indentures clauses restrictive of future practice within a certain precribed area, and to encourage the use of the R.I.B.A. Form of Articles of Pupilage.*

(H) Overcrowding in Scotland.—Owing to the difficulty of obtaining up-to-date statistics and other information, Scotland has not been included in the field covered by this report, which deals with England and Wales only.

We recommend that the Incorporation of Architects in Scotland be invited to initiate a similar inquiry into the question of overcrowding in Scotland.

NEW BOOK BY MR. GOTCH.

Messrs. Methuen and Co. have recently issued the announcement of a new book about to be published by Mr. Gotch, the Past President of the Royal Institute, under the title of "Old English Houses," which, we gather, is designed for readers who have no intimate acquaintance with architecture. Technicalities are avoided, and it is the human aspect of the subject which has influenced the author in his treatment of the story. The mediæval house is described in sufficient detail to lead up to the main theme which is the development of the house after it had ceased to be a fortress and had begun to assume the characteristics which distinguish the homes of to-day. The human aspect is emphasised by anecdotes and incidents illustrative of changing manners and customs; not only are houses described, but also some of the doings of their inhabitants. The mediæval lady who commissioned her husband, when in London, to purchase sugar, cloth and arrows (of which, to their peril, they had nearly run out); the Elizabethan lady who resolved to change the subjects of her tapestry according to the seasons of the year; the Georgian gentleman who was hurried into a cupboard while his rival proposed and was rejected; all these help to give life to the story. But the story itself deals with the gradual changes brought about in the arrangement of houses partly in the pursuit of slowly enlarging ideas of comfort, and partly in compliance with changes in architectural style. Both the outside and the inside treatment are described and are illustrated by plans and photographs, many of which are new to architectural readers.

It will be apparent that the ground covered by this book has already been traversed in greater detail by former works of the same author, but those who happen to be acquainted with his books may perhaps find a little diversion in reading the same tale more lightly told, and we should imagine that it will not as a whole be less informative and interesting to architects than it will be to general readers.

THE ARCHITECTURE CLUB.

The third Architectural Exhibition of the Architecture Club will be held in the Galleries of the R.I.B.A. from 26 October to 14 November (inclusive). The Exhibition will comprise (*a*) recent architecture, (*b*) interior architectural decoration, and (*c*) architects' preliminary sketches. The club has issued a programme of conditions for prospective exhibitors, the first three articles of which are as follows:—

1. Architects will be invited to submit works for exhibition. Members of the club will have the right to submit their work, but membership does not ensure that all or any of the exhibits submitted will be hung.

2. All works sent to the Exhibition shall be submitted to the Committee, whose selection will be final.

3. Works will be eligible for exhibition whether previously shown elsewhere or not; but examples shown at or submitted to previous exhibitions of the club are not eligible.

All communications on the subject of the Exhibition should be addressed to the Secretary of the Architecture Club, *The London Mercury* Office, Castle Court, Poppin's Court, London, E.C.4.

A.B.S. SCHEME OF PROFESSIONAL INSURANCE.

Insurance to-day is a very complicated business and too much care cannot be exercised in the choice of an insurance company and of a policy. If, however, architects consult the Insurance Committee of the Architects' Benevolent Society, they are sure of obtaining competent guidance in all insurance matters. Especially favourable terms are secured by the Society, and every insurance negotiated through its agency results in a direct contribution to the Benevolent Fund. Enquiries should be addressed to the Secretary, A.B.S., 9 Conduit Street, W.

NOTES FROM THE MINUTES OF THE COUNCIL MEETING.

6 *July* 1925.

Registration of Probationers.

On the recommendation of the Board of Architectural Education it was decided that the Day School Certificate (Higher) Examination and the Leaving Certificate Examination of the Scottish Education Department (covering the required subjects) be included in the list of Examinations recognised in connection with registration as Probationer R.I.B.A.

Exemption from the R.I.B.A. Final Examination.

Exemption from the R.I.B.A. Final Examination was granted to the School of Architecture, Edinburgh, for the five years' all-day course and for the six years' part time course, subject to the usual conditions and to revision on the occasion of the next visit of the R.I.B.A. Visiting Board to the School.

R.I.B.A. Students and the "Journal."

It was decided that in future all Registered Students of the R.I.B.A. should receive the Journal free of charge.

Students of Recognised Schools and Office Experience.

In order to assist advanced Students of Recognised Schools up to the stage of the completion of their qualifications for the Final examination, it was decided to open a Register of such Students together with a Register of the names of architects in practice who are willing to take such Students into their offices for the prescribed period.

The Tasmanian Institute of Architects.

The Tasmanian Institute of Architects was admitted as an Allied Society of the R.I.B.A.

Examination Fees: Relegated Candidates.

It was decided that candidates relegated in the Intermediate, Final and Special Examinations—who, under the present rule, must pay the full fee of five or six guineas (as the case may be) for the third and subsequent occasions upon which they present themselves—should in future be required instead to pay a fee of ten shillings and sixpence for each subject in which they have been relegated, on each occasion upon which they present themselves for examination.

New Class of "Subscribers."

The first applications for election to the new class of "Subscribers" were received and approved.

20 *July* 1925.

Overcrowding of the Architectural Profession.

The Council approved and ordered the publication of the Report of the Joint Committee of the R.I.B.A. and the Association of Architects, Surveyors and Technical Assistants on the subject of the alleged overcrowding of the architectural profession (see pages 590-591).

Improvement of R.I.B.A. Organisation.

The Council approved a scheme for improving the work of the Council and Committees of the R.I.B.A. which involved the creation of an Executive Committee and the holding of monthly instead of fortnightly meetings of the Council.

R.I.B.A. Soirée.

It was decided that the occasion of the completion of the amalgamation of the Society of Architects with the R.I.B.A. should be marked by a Soirée to be held in the R.I.B.A. Galleries in the coming autumn.

British Architects' Conference, 1925.

A cordial vote of thanks and appreciation was passed in favour of the Northern Architectural Association for having organised and carried out the arrangements for the Conference with such conspicuous success.

The University College of the South-West of England.

Mr. J. Leighton Fouracre [*F.*] was appointed to represent the R.I.B.A. as a member of the Court of Governors of the University College of the South-West of England for the three years beginning on 1 August 1925.

The Institution of Public Lighting Engineers.

Mr. W. Alban Jones, President of the Leeds and West Yorkshire Architectural Society, was appointed as the representative of the R.I.B.A. at the Second Annual Meeting and Conference to be held at Leeds on 14, 15 and 16 September 1925.

CONFERENCE WITH TEACHERS OF BUILDING.

On Tuesday, 28 July 1925, the Board of Architectural Education of the Royal Institute of British Architects held a Conference with the representative teachers of Building who have been undergoing a course in London arranged by H.M. Board of Education.

The Conference took place in the R.I.B.A. Galleries and was largely attended.

The Chairman of the Board of Architectural Education, Mr. Maurice E. Webb [*F.*], D.S.O., M.C., presided, and papers were read by Professor Beresford Pite [*F.*] and Mr. M. S. Briggs [*F.*], H.M. Inspector, on the Teaching of Building Construction from the architects' and from the teachers' points of view respectively.

In the subsequent discussion the following spoke:—Mr. A. R. Sage, M.B.E. (Principal of the L.C.C. School of Building), Mr. J. W. Riley (Head of the Building Department, Rochdale Technical School), Mr. W. W. Hitchins (Lecturer in Building Construction, University College, Reading), Mr. Donald Cameron (School of Architecture, the Architectural Association), Mr. E. H. Evans (School of Architecture, the Architectural Association), Mr. C. B. Howdill (Leeds), Mr. T. P. Bennett (Head of Department of Architecture, Surveying and Building, the Northern Polytechnic), Mr. F. E. Drury (School of Architecture, Manchester University), Mr. G. J. Grantham (School of Architecture, Manchester University).

At the conclusion of the Conference, Mr. Hugh Davies, H.M. Inspector, in a short speech, moved a vote of thanks to the Chairman.

The teachers subsequently inspected the following examples of architects' working drawings, which were exhibited in the Galleries:—Adelaide House, London Bridge (Sir John Burnet, R.A., and Partners); Britannic House, Finsbury Circus (Sir Edwin Lutyens, R.A.); Tetton House, Kingston, Somerset (Mr. H. S. Goodhart-Rendel); Bush House, Aldwych (Messrs. Helmle and Corbett).

Competitions

THE VALLETTA LAY-OUT COMPETITION.

THE AWARD OF THE ASSESSORS.

Valletta,
10 *July* 1925.

To the Hon. Dr. Giovanni Adami,
Minister for Public Works.

SIR,—Having carefully inspected the whole of the areas covered by the Lay-Out Scheme for which your Government invited competitive designs, in October 1924, and having now completed our examination of the fourteen (14) sets of plans and accompanying documents submitted for our judgment, in strict accordance with the conditions appointed by your Ministry, we have the honour to report our award as follows :—

After very careful consideration of the fourteen (14) schemes so submitted, and explained by the drawings and accompanying documents, we have no hesitation in awarding the first premium of £1,000 to the scheme " CALYPSO "—

Messrs. James Burford, A.R.I.B.A., and S. Rowland Pierce, of 3 Staple Inn, Holborn Bars, London, W.C.1 ;

and the second premium of £500 to the scheme " CARPENT TUA POMA NEPOTES "—

Monsieur Rene Danger, of 6 Rue d'Angouleme, Paris ;

and further in recommending that indemnities of £100 each be awarded to the schemes bearing respectively the mottoes or devices :

" S. GIORGIO E FLORIANA " : Signor Di Segni, of Regio Ufficio dei Laveri Pubblici, Tripoli.

" QUEST " (below a ship) : Monsieur Jacques Alleman, of Rue Ludovic Boutleux, Bethune, France.

" URBEM SERVARE NECESSE " : Monsieur Alberte Laferla, 113 Strada Levante, Valletta, Malta.

This award being made upon the condition that competitors premiated or indemnified shall satisfy us that they are the *bona fide* authors of the schemes to which their names are attached (*vide* No. 14 of the conditions issued to all competitors).

In making this award, in consonance with our duties as appointed assessors of the competition, we desire to recognise the high average of ability shown by the authors of the schemes above recommended for premia or indemnities, in dealing with the peculiar difficulties of the areas indicated for exploitation, in respect of constant and sometimes acute divergence of levels, of the many complications arising from reserved territories within the limits of those areas, and of the irregularity of the boundaries.

We further desire to say that most of the competitors have shown a successful handling of several of the many difficult problems involved, whether practical or æsthetic, while respecting the conditions imposed.

We have the honour to be, Sir,
Your obedient servants,
EDWARD WARREN,
PATRICK ABERCROMBIE,
Assessors.

COVENTRY AND WARWICKSHIRE HOSPITAL. PROPOSED NEW WARD BLOCK.

Members of the Royal Institute of British Architects must not take part in the above competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

IAN MACALISTER,
Secretary.

27 *July* 1925.

COMPETITION FOR A HIGH BRIDGE OVER COPENHAGEN HARBOUR.

Copenhagen Municipality hereby invite participation in an International Competition in connection with a High Bridge over Copenhagen Harbour.

The Municipality have set apart a sum of 35,000 kroner to be expended in prizes. There will be three prizes, the value of which will be fixed by a Judgment Committee consisting of Members of the Council, together with technicians chosen by the Municipality, the (Danish) Institute of Civil Engineers and the (Danish) Society of Architects. The largest prize will be at least 15,000 kroner.

Programme and particulars in Danish and English can be procured after 1 February 1925, from the City Engineer's Office, Town Hall, Copenhagen B, against a deposit of kr. 100.

The deposit is repayable after the judging, or previously if the drawings, particulars, etc., are returned in good condition. Projects to be delivered to the City Engineers Directorate, Town Hall, before mid-day, 1 September 1925.

After judgment the competing projects will be publicly exhibited at the Town Hall, Copenhagen.

LEAGUE OF NATIONS.

COMPETITION FOR THE SELECTION OF A PLAN WITH A VIEW TO THE CONSTRUCTION OF A CONFERENCE HALL FOR THE LEAGUE OF NATIONS AT GENEVA.

The League of Nations will shortly hold a competition for the selection of a plan with a view to the construction of a Conference Hall at Geneva. The competition will be open to architects who are nationals of States Members of the League of Nations.

An International Jury consisting of well-known architects will examine the plans submitted and decide their order of merit.

A sum of 100,000 Swiss francs will be placed at the disposal of the Jury to be divided among the architects submitting the best plans.

A programme of the competition when ready will be despatched from Geneva, and Governments and competitors will receive their copies at the same time. Copies for distant countries will be despatched first.

The British Government will receive a certain number of free copies. These will be deposited at the Royal Institute of British Architects, and application should be made to the Secretary, R.I.B.A., 9, Conduit Street, W.1, by intending competitors.

Single copies can be procured direct from The Secretary-General of the League of Nations at Geneva, for the sum of 20 Swiss francs, payable in advance, but will not be forwarded until after the Government copies have been despatched.

On the nomination of the President of the Royal Institute, Sir John Burnet, A.R.A., has been appointed as the British representative on the Jury of assessors.

THE NEW INSTITUTE FOR THE BLIND, BUENOS AIRES, ARGENTINE REPUBLIC.

An International Competition has been promoted for the Argentine Institution for the Blind, Buenos Aires, Argentine Republic.

A small number of copies of the Conditions have been

deposited in the R.I.B.A. Library for the information of British Architects who may desire to compete.

A booklet containing the full text of the conditions with other information (translated from the Spanish) and a plan of the ground on which the Institution is to be erected is available for inspection at the Department of Overseas Trade (Room 42), 35 Old Queen Street, London, S.W.1.

PROPOSED FIRE AND POLICE STATION, NEWCASTLE-UPON-TYNE.

Premiums £500, £300 and £100 respectively are offered. Assessor Mr. Percy S. Worthington, F.R.I.B.A. Conditions may be obtained by depositing £2 2s. Designs to be sent in not later than 8 October 1925. Apply A. M. Oliver, Town Clerk, Town Hall, Newcastle-upon-Tyne.

WOLVERHAMPTON AND STAFFORDSHIRE HOSPITAL.

Proposed out-patient and casualty department, to be erected in Cleveland Road, Wolverhampton. Assessor, Mr. T. R. Milburn, F.R.I.B.A. Premiums £200, £150, and £100. Designs to be sent in not later than September 5th, 1925. Conditions obtainable by depositing £1 1s.

SEVENOAKS U.D.C. HOUSING COMPETITION.

Members of the Royal Institute of British Architects must not take part in the above Competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

GOWER R.D.C. HOUSING COMPETITION.

Members of the Royal Institute of British Architects must not take part in the above Competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

COMPETITION FOR THE ENLARGEMENT OF THE CARNEGIE HALL, DINGWALL.

The Competitions Committee desire to call the attention of Members to the fact that the Conditions of the above Competition are not in accordance with the Regulations of the R.I.B.A. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime Members are advised to take no part in the Competition.

The Examinations

FINAL AND SPECIAL.

The Final and Special Examinations qualifying for candidature as Associate R.I.B.A. were held in London from 8 to 16 July.

Of the 62 candidates admitted (one of whom took Part II only) 42 passed and the remaining 20 were relegated.

The successful candidates are as follows :—

AIMER : KENNETH WALTER [Special], c/o Bank of New Zealand, 1 Queen Victoria Street, E.C.4.

ALLCORN : WILLIAM JOHN [S. 1913], The Pinnacles, Shipbourne.

ALSOP : GEORGE HATHERLEY [S. 1925], Australia House, Strand, W.C.2.

ANDREWS : CLAUDE EVRARD ALDINGTON [Special], 29 Greenhill Road, Moseley, Birmingham.

BAILY : BRUCE WILLIAM SEYMOUR STILES [Special], White Hall, 13 Woburn Place, Russell Square, W.C.1.

BHUTA : GOPALJI MULJI [S. 1924], 112 Gower Street, W.C.1.

BOWEN : WILLIAM ARCHER FORREST [Special], 46 Rigby Lane, Bradshaw, Bolton, Lancs.

CHANNON : GUY DUNSTAN [Special], Red Walls, Malton, Yorkshire.

CHATTERLEY : ARTHUR OLIVER, B.Arch. [S. 1921], 73 Oriel Road, Bootle, Liverpool.

CONOLLY : HAROLD [S. 1921], Aysgarth, Walton, Wakefield.

COOPER : JOHN BRIAN [S. 1922], 10 Wentworth Road, Golders Green, N.W.11.

FAHY : CONOR PATRICK [Special], 33 Leppoc Road, Clapham, S.W.4.

FORSTER : EDWARD [S. 1924], 1 Leaside Avenue, Muswell Hill, N.10.

HARMAN : RICHARD STRACHAN DE RENZY [S. 1920], 16 Endsleigh Street, W.C.1.

HUME : BERTRAM STEWART [S. 1924], 24 Upper Gloucester Place, Dorset Square, N.W.1.

*IBRAHIM : AHMED FAHMY [Special], Building Department, P.W.M., Cairo, Egypt.

KING : JOHN GOULD [S. 1925], 70A St. George's Road, S.W.1.

LANDER : FELIX JAMES [S. 1921], 4 Brampton Road, St. Albans.

MARTIN : GEORGE LEGAT [S. 1923], 31 Maureen Terrace, Seaham Harbour, co. Durham.

METCALFE : JOHN ARMSTRONG [S. 1921], Vale View, Wingfield Road, Whitchurch, near Cardiff.

MILLER : JOSEPH CHARLES [S. 1925], 101 Stanmore Road, Mount Florida, Glasgow.

PARKER : JOHN HERBERT [S. 1921], 12 The Homesteads, Muswell Hill, N.10.

PRANGNELL : CECIL THOMAS [S. 1922], 43 Edmund Street, Camberwell, S.E.5.

PRICE : WILFRED JOHN BROOKHOUSE [S. 1923], 34 Kensington Gardens, Ilford, Essex.

READ : GEOFFREY ERNEST [S. 1924], " Ashgrove," 134 Church Road, Upper Norwood, S.E.19.

RIX : ALEC DONALD [S. 1914], 2 Salcombe Gardens, Clapham Common, S.W.4.

*RIZKALLA : NESIM [Special], c/o Professor Beresford Pite, 101 Great Russell Street, W.C.1.

SENYARD : LEONARD [Special], 58 Redcliffe Square, South Kensington, S.W.

SHARMA : PURSHOTTAM LAL [S. 1924], Melton House, 48 Anerley Park, S.E.20.

SIMPSON : JAMES ROUNTHWAITE MOORE [Special], 33 Northway, N.W.11.

SMITH : ERIC STEWARD [S. 1924], 76 Elmhurst Road, Reading.

STOKES : HORACE WILLIAM [S. 1923], 119 Wills Street, Lozells, Birmingham.

TAYLER : KENNETH SEAWARD [S. 1922], 41 Cranbourne Gardens, N.W.11.

THOMPSON : ARNOLD JOHN [Special], 15 Earlsfield Road, Wandsworth Common, S.W.18.

TOCHER : WILLIAM [S. 1925], c/o J. C. Procter, 62 Woodhouse Lane, Leeds.

TOONE : AUBREY ALFORD GIFFORD [S. 1911], 12 Addison Terrace, Victoria Park, Manchester.

TURNER : ERNEST CHARLES [Special], 27 Maldon Road, Cumberland Park, W.3.

UNWIN : EDWARD [Special], Wyldes, North End, N.W.3.

WINTER : FRANK THOMAS [Special], Holmer Green, High Wycombe.

WOODGATE : JAMES AUSTEN [Special], 14 Trinity Crescent, Folkestone, Kent.
WRAY : KENNETH FLETCHER [S. 1924], 147 Mitre Street, Waterloo Road, S.E.1.
WRIGLEY : FRED HILDRED [S. 1921], 2 King Street, Wakefield, Yorks.

The candidates marked * are not British subjects, but have taken the examination for the purpose of obtaining certificates to that effect.

THE SPECIAL EXAMINATION IN DESIGN FOR FORMER MEMBERS OF THE SOCIETY OF ARCHITECTS TO QUALIFY FOR THE ASSOCIATESHIP.

The Special Examination in Design for former members of the Society of Architects to qualify for the Associateship was held in London from 8 to 13 July.

Of the 23 candidates admitted, 19 passed and the remaining four were relegated.

The successful candidates are as follows :—

ADAMS : WILLIAM HENRY, 6, Lincoln Gardens, Goldthorpe, near Rotherham.
BILL : EDWARD RICHARD, 164 Abbey Foregate, Shrewsbury.
BUTTON : FREDERICK CHARLES, 5 St. Hilda Road, Folkestone.
CHILTON : ERNEST ALFRED, F.S.I., Town Hall Chambers, Uckfield.
COLLINS : HERBERT, 11 Brookvale Road, Southampton.
COLLINS : SAMUEL HERBERT, 9 Great Elms Road, Bromley, Kent.
FOX : CHARLES WILLIAM, 78 Handside Lane, Welwyn Garden City, Herts.
HUGHES : JAMES O'HANLON, 16 Whinyates Road, Eltham, S.E.9.
JACKSON : GORDON WALLET, 5 Yelverton Road, Bournemouth.
JAMES : JOHN CHARLES FREDERICK, 3 Craven Court, Craven Park, N.W.10.
JONES : EVAN DANIEL, Architect's Department, The Council Offices, Pontardawe, Swansea.
MACPHAIL : DUNCAN ST. CLAIR, 130 Marchmont Road, Edinburgh.
MARSHALL : JAMES ERNEST, 415 Liverpool Road, Southport.
MILLETT : DOUGLAS GLADSTONE, The Welkin, Upperton Road, Eastbourne.
O'BEIRNE : THOMAS, 3 Carrick Avenue, Ayr.
PICTON : CLEMENT JOHN, Wambrook, Hillshott, Letchworth, Herts.
PRICE : THOMAS GEORGE, Cross Hands, Llanelly, South Wales.
SCALES : SYDNEY GEOF, Lloyds Bank Chambers, Eastbourne.
WERRY : WILLIAM JOHN, 16 Dix's Field, Southernhay East, Exeter.

EXAMINATION IN PROFESSIONAL PRACTICE FOR STUDENTS OF RECOGNISED SCHOOLS EXEMPTED FROM THE FINAL EXAMINATION.

The following 33 candidates passed this Examination, which was held on 14 and 16 July.

ALLEN : ALFRED MAXWELL (Architectural Association).
ASTBURY : FRANK NICHOLAS (Liverpool University).
BARTON : HERBERT LESLIE (Liverpool University).
CAMERON : ARTHUR EDWIN (Architectural Association).
CLARK : JAMES CHARLES (Robert Gordon's Colleges, Aberdeen).
CROSSLEY : FREDERICK HAMER (Liverpool University).
CUTBUSH : PATRICK (Architectural Association).
DEAS : THOMAS VICTOR (Glasgow School of Architecture).
FARQUHAR : LUDOVIC GORDON (Glasgow School of Architecture).
GLASHAN : WILLIAM (Robert Gordon's Colleges, Aberdeen).
GREEN : FRANCIS ERNEST (Architectural Association).
GREENIDGE : JOHN THEODORE WATERMAN (London University).
KHAN : HASAN HAYAT (Architectural Association).
LAWRIE : ROBERT SORLEY (Robert Gordon's Colleges, Aberdeen).
LEWIS : DORIS ADENEY (Architectural Association).
LEWIS : ERNEST WAMSLEY (Architectural Association).
LOUW : HENDRIK JACOBUS (Architectural Association).
MEIKLE : EDYTH (Architectural Association).
MINOPRIO : CHARLES ANTHONY (Liverpool University).
MORRISON : ROBERT HORN (Robert Gordon's Colleges, Aberdeen).
OWEN : JOHN HUGH LLOYD (Liverpool University).
PERCIK : WOOLF (Architectural Association).
PRESTON : FREDERICK LESLIE (Architectural Association).
ROSCOE : FRANK JUNIOR (Architectural Association).
SHAW : CHARLES CECIL (Liverpool University).
SILCOCK : FRANCES THELMA (Liverpool University).
STEWART : ALEXANDER MALCOLM (Robert Gordon's Colleges, Aberdeen).
THEARLE : HERBERT (Liverpool University).
WALKER : ARCHIBALD GRAHAM (Glasgow School of Architecture).
WALL : MAUD AMY MARGARET (Liverpool University).
WILLS : THOMAS THEOPHILUS (Liverpool University).
WOOD : JOHN WILLIAM (Architectural Association).
WOOD : THOMAS RUDDIMAN (Robert Gordon's Colleges, Aberdeen).

BOARD OF ARCHITECTURAL EDUCATION.

THE SOANE MEDALLION AND THE TITE PRIZE.

FINAL COMPETITIONS.

As the result of the Preliminary Competitions for the Soane Medallion and the Tite Prize, the following have been selected to take part in the Final Competitions :—

The Soane Medallion.

Miss E. Scott, School of Architecture, Architectural Association.
Mr. W. Percik, School of Architecture, Architectural Association.
Miss A. M. Hargroves, School of Architecture, London University.
Mr. S. Lloyd-Thomson, London University Architectural Atelier.
Mr. A. D. Connell, London University Architectural Atelier.
Mr. T. Theo. Wills, School of Architecture, Liverpool University.
Mr. H. L. Barton, School of Architecture, Liverpool University.
Mr. Leslie R. Hiscock, School of Architecture, Architectural Association.

The Tite Prize.

Mr. K. E. F. Gardiner, School of Architecture, Architectural Association.
Miss L. F. M. Payne, School of Architecture, London University.
Mr. Robert G. Heal, School of Architecture, Liverpool University.
Mr. E. F. Davies, School of Architecture, Liverpool University.
Mr. A. Calvaley Cotton, School of Architecture, Liverpool University.
Miss E. B. Alexander, School of Architecture, Manchester University.
Mr. G. Alan Burnett, School of Architecture, Leeds School of Art.
Mr. F. Chippindale, School of Architecture, Leeds School of Art.
Mr. T. Murray Ashford, School of Architecture, Birmingham.
Mr. D. G. Walton, School of Architecture, Birmingham.
Mr. S. H. Smith, Northern Polytechnic Institute.
Miss M. Harvey, Northern Polytechnic Institute.
Mr. I. Schultz, Northern Polytechnic Institute.
Mr. V. Banks, Cardiff Technical College.

THE BRITISH SCHOOL AT ROME.

THE ROME SCHOLARSHIPS

At a meeting of the Faculty of Architecture of the British School at Rome, held on 2 July, the designs submitted in the Final Competition for the Rome Scholarship and Henry Jarvis Studentship of 1925 were considered, and the Faculty unanimously decided to make the awards as follows :—

Rome Scholarship : Mr. G. A. Butling, Liverpool University.

Henry Jarvis Studentship : Mr. C. A. Minoprio, Liverpool University.

Notices

EXAMINATION FOR THE R.I.B.A. DIPLOMA IN TOWN PLANNING.

The questions set at the recent Examination for the R.I.B.A. Diploma in Town Planning are obtainable at the R.I.B.A., 9 Conduit Street, W.1, price 6d. per set.

UNIVERSITY COLLEGE

The following awards have been made in the Bartlett School of Architecture at University College :—

Bartlett Entrance Exhibitions : Edna M. L. Mills, Brighton and Hove High School ; Harold F. Hoar, Latymer Upper School, Hammersmith.

Herbert Batsford Prize (First Year Classes) : E. Somaké.

Certificates in Architecture : F. S. Bardell, G. R. Cochrane, Margaret A. de Quincy, H. T. Dyer, L. P. Ellicott, E. Forster, Jessie M. Greig, H. Kendall, D. H. Mirams, C. G. Weald.

Sub-Department of Town Planning : Lever Prizes ; First, C. D. J. Benton ; Second, L. M. Chitale and S. L. G. Beaufoy (equal).

Certificates in Town Planning : S. L. G. Beaufoy, A. J. E. Benton, C. D. J. Benton, L. M. Chitale, Gertrude W. M. Leverkus, B. A. Moss.

REGISTRATION AS PROBATIONER R.I.B.A.

Special attention is called to the fact that, except in very special cases, a Headmaster's Certificate will not be accepted after 1 October 1927, and no one will be registered as a Probationer of the R.I.B.A. unless that person has passed one of the recognised examinations in the required subjects.

A list of the examinations recognised may be obtained free at the R.I.B.A.

AMENDMENTS OF THE BYE-LAWS OF THE R.I.B.A.

By an order of the Lords of His Majesty's Privy Council dated 10 July 1925 the following amendments to Bye-law 29, with regard to the representation of Dominion Allied Societies on the R.I.B.A. Council and the addition of the Chairmen of the four Standing Committees, were approved :—

Bye-law 29 (d).—To be amended by the addition of the following words :

> " Provided always that in the event of the representative nominated by any such Society being absent from the United Kingdom such Society shall be entitled to nominate a member of the Council of the Royal Institute for the time being who is practising in the United Kingdom to represent it upon the Council during the absence of the representative first so nominated as aforesaid."

Bye-law 29 to be amended by the addition of the following words after paragraph (g) :

> " (h) The Chairman for the time being of each of the four Standing Committees referred to in Bye-law 52."

IAN MACALISTER,
Secretary R.I.B.A.

23 July 1925.

FINE ART COMMISSION.

The King has appointed Mr. Dugald Sutherland MacColl to be a member of the Royal Fine Art Commission to fill the vacancy caused by the death of Lord Curzon of Kedleston ; and to appoint Dr. Percy Scott Worthington, F.R.I.B.A., to be an additional member of the Commission.

Mr. F. S. Baker [*F.*] has resigned the office of Hon. Secretary R.I.B.A. for Canada, after holding this position since the year 1905. The Council have reluctantly accepted his resignation and have passed a resolution expressing their indebtedness to him for his long and valuable service to the R.I.B.A. in occupying this important position.

Members' Column

CHANGES OF ADDRESS.

Mr. M. J. H. SOMAKÉ [*F.*] has changed his address from 284 Cricklewood Lane, N.W.2, to 245 Willesden Lane, N.W.2.

THE address of Mr. H. T. Jackson [*A.*] will be, after the 17th August, c/o City Engineer's Office, Council House, Coventry.

PARTNERSHIP AND CHANGE OF ADDRESS.

MR. H. D. SUGDEN, A.R.I.B.A., has moved his office to 10 Conduit Street, W.1, and taken into partnership Mr. B. W. K. Goode. The practice will be carried on in the name of Sugden and Goode, Architects.

PARTNERSHIPS WANTED.

A.R.I.B.A., London trained (34—deducting years of the War), in practice elsewhere, wants to return to London. Has had successes in recent big competitions and good all-round building experience. Has been commissioned with £50,000 job won in competition within last few months. Desires partnership with established architect who will guarantee minimum return per annum over a term of years.—Apply Box 2175, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

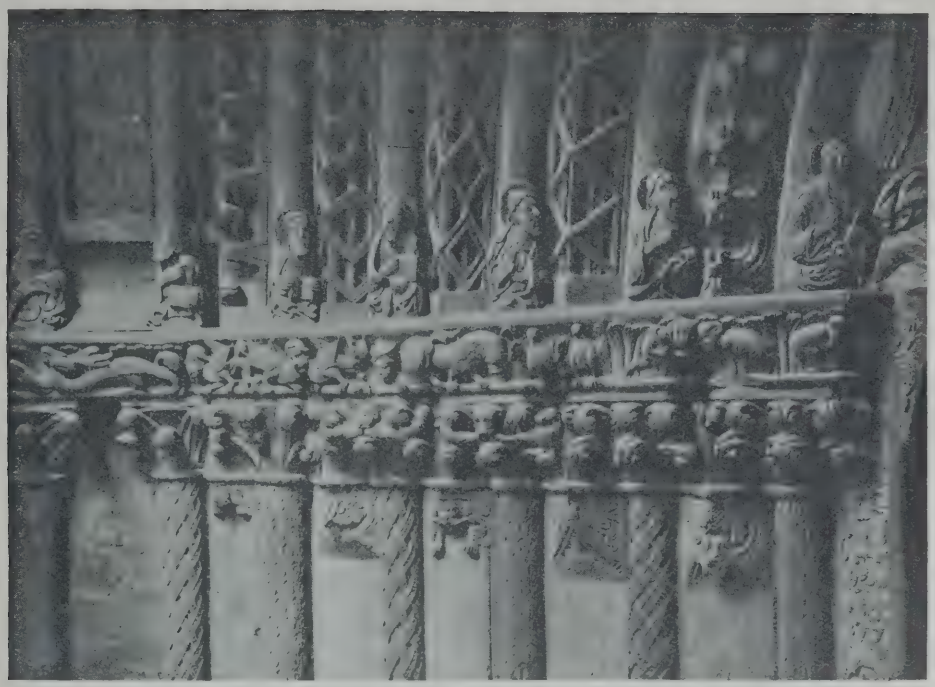
ARCHITECT (A.R.I.B.A. 1906) is looking for partnership in well-established practice. Has had considerable experience in both public and domestic work. Moderate capital available.—Apply Box 2075, c/o The Secretary R.I.B.A., 9 Conduit Street, W.1.

A.R.I.B.A. and Dip.A.A. seeks partnership in established firm of London Architects. Keen, energetic, seven years' British and American office experience. Capital available.—Apply Box 2875, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

SHARE OF LARGE SINGLE-ROOM OFFICE, GRAY'S INN DISTRICT.

ARCHITECT desires to share large ground-floor single office with another on mutual terms. Gray's Inn district. Telephone. Electric light. Typist's services.—Apply Box 2275, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

Members sending remittances by postal order for subscriptions or Institute publications are warned of the necessity of complying with Post Office Regulations with regard to this method of payment. Postal orders should be made payable to the Secretary R.I.B.A., and crossed.



DETAIL OF THE GREAT PORTAL OF ST. STEPHEN'S CATHEDRAL, VIENNA

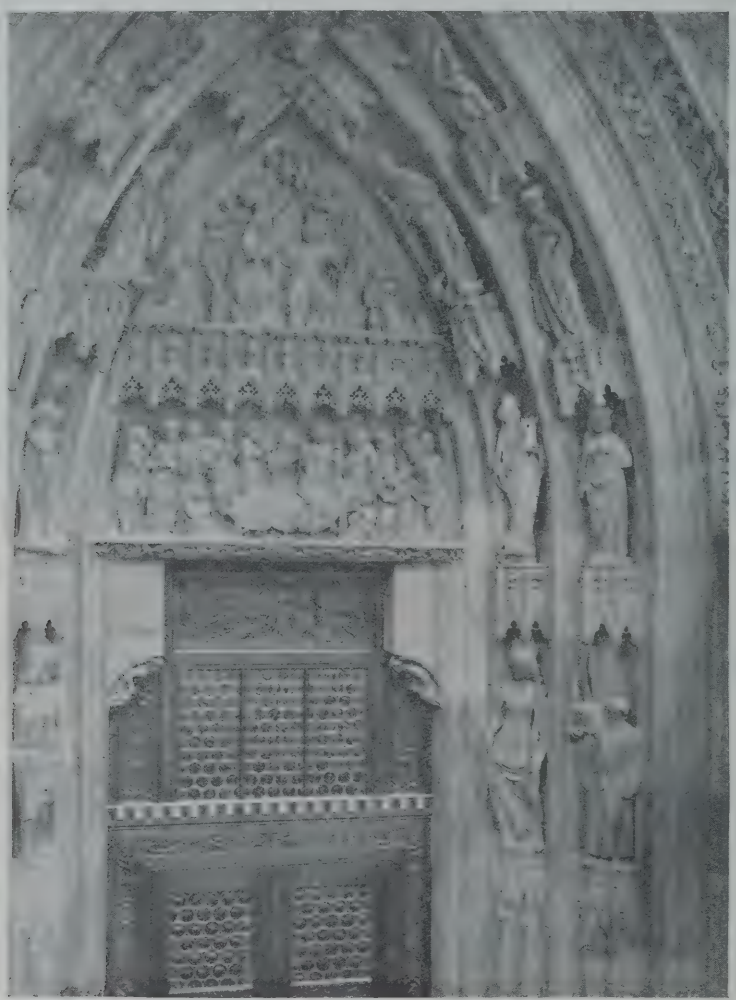
The Sculpture in St. Stephen's Cathedral, Vienna

BY HANS TIETZE

IN the Middle Ages St. Stephen's Cathedral, Vienna, was renowned as one of the main centres of Gothic architecture in Germany. Its influence stretched beyond Austria to Hungary and the Danubian principalities. The Gothic buildings there, in so far as they have been preserved, show many recognisable associations with St. Stephen's Cathedral. The far-reaching Eastern influence of the Cathedral is explained by the geographical and political position of Vienna. Situated at the extreme border of West European civilisation, it could not but be the natural mediator between the countries of the East and of the West. Its position, far from the centres of great international movements, and near to the world of the Orient, was subjected to quite a different mentality; this determined both the general mental character of Vienna and its artistic character, not only during the Middle Ages, but, one might add, up to the present time.

This peculiar quality in Viennese art is found in the oldest example of monumental sculpture in Vienna, the so-called " Great Portal " (Riesenthor) of St. Stephen's, which (with the whole of the front of the late Romanesque church) was incorporated in the stupendous façade of the Gothic Cathedral in the fifteenth century. The tendency to protect what already exists and leave it undisturbed in a new creation is also one of the characteristic qualities of Viennese art. The " Great Portal " does not belong to the oldest church on this site, but to a building which was built in the second half of the thirteenth century, owing to the growth of the town under the last Princes of the House of Babenberg. It was erected about 1260 in the Romanesque style, which at that time had made way for the young, victorious Gothic in Western Europe. But here, further East, modern currents were still unknown, and forms were permitted which elsewhere had long been superseded. A kind of Colonial style which had come from the North of Italy characterises the porch; and Norman elements communicated to Vienna by the Ratisbon so-called Scotch monks, who settled there in the twelfth century, also appear in the design. The " Great Portal " is funnel-shaped, widening towards the outside, the walls of which are supported by columns decorated with foliage. Over the richly

corniced capitals runs an architrave with figures in relief. Half-length figures of the Apostles are placed before the recesses. In the tympanum over the door Christ is enthroned as the Saviour of the World in the mandorla, supported by draped angels with spreading wings. All these motifs are well known from the



"Bishop's Porch" of St. Stephen's Cathedral, Vienna

portals of other churches. The Tympana of Charlieu, still more that of St. Julien se Tonzy (Saône et Loire ; see Porter, *Romanesque Sculpture*, Illus. 108, 111), seem to be the immediate patterns of the Vienna "Majestas Domini," which, however, is a hundred years later.

A few decades after the "Great Portal" was completed, Gothic architecture forced its triumphant way into this Eastern boundary land, that in the meanwhile had undergone also a great political change. In 1282 Rudolph of Habsburg had handed this country over to his eldest son, Albrecht, thereby laying the foundation of a powerful dynasty, which from that time—until 1918—ruled a large empire. It was natural that the capital town should feel keenly the fresh impulse proceeding from the new princely house, and that building activity should gain thereby. Within the next generation, St. Stephen's Church, to which had just been given a new form, was again enlarged. A choir was added to the Romanesque nave, and Gothic forms were now adopted. This building period lasted from about 1306 to 1340, and was named the Albertic, after the then reigning Duke Albrecht II. These sculptures of the choir, the greater part of which was done in 1330, show great similarity to the Regensburg

school. The Saints Christopher, Laurence, Katharine, Stephen and John on the pillars are still in their original places in the centre choir ; a Madonna as a protectress, a Madonna and Child, an Angel of the Annunciation, and a St. Anna are all of the same style. They are powerful figures with compact proportions and angular heads on broad shoulders, heavy draperies hanging in many folds. They are the result of the new feeling of which Giotto was the greatest pioneer and which in the thirteenth century sup-

Scenes from the Life of St. Paul
Details of the " Singer's Porch," St. Stephen's Cathedral, Vienna

planted the former European ideal of elegant knights, priests and graceful women.

In the second half of the fourteenth century Duke Rudolph IV. continued the work begun by his father Albrecht, and added a richer and more magnificent nave.

The two side portals of the cathedral, the " Bishop's" and the " Singer's Porch," belong to the earliest parts of this new period of building. The Bishop's Porch was intended for the women's entrance, the Singer's for the men's. In the tympanum over the door of the latter there are reliefs in two zones with scenes from the life of St. Paul. In the double chamfer of the bordering are statues of Duke Rudolph and his wife Katharine ; above these figures are statues of male saints. On the Bishop's Porch the relief in the door shield shows the Death and Coronation of the Blessed Virgin, and the bordering above the statues of Duke Albrecht III., Rudolph's brother and successor, with female saints. Both portals are cast on a common plan, but they are not uniformly carried out. The style of the Bishop's is older, its art reminds us that the building construction of the Cathedral is closely allied with Prague. About this time Emperor Charles IV., the father-in-law of Duke Rudolph, encouraged a magnificent activity in building. Peter Parler built St. Veit's Cathedral in Prague. The statue of St. Wenceslas in Prague Cathedral, begun in 1373, shows the closest relationship to the figure of Duke Albrecht in the Vienna Portal, and similar conformity may be noticed here and there with the other sculptures.

This style came to Prague from Gmund, in Swabia, where the immediate predecessor of one of the Viennese tympana is to be found. At Gmund in the South Portal the Death of Mary is shown in the lower section ; the Coronation of the Virgin is represented in the triangular space above. The style of the Vienna representation is coarser : the figures and heads are heavier, but the draperies are more delicately modelled.

At the end of the fourteenth and beginning of the fifteenth century, Viennese sculpture came under the influence of Bohemian art. An example of this is to be found in the reliefs of the Singer's Porch. Here the chief scenes are taken from the life of the Apostle Paul; his fall, conversion, baptism and death are told with spiritual inspiration and dramatic emotion. In place of heavy short figures, slender, delicate, almost fragile shapes appear with affected positions and expressive gestures.

The last quarter of the fourteenth century may be regarded not only as the most obscure, but perhaps also as the most important period in the history of the sculpture of St. Stephen's. According to the latest hypothesis, the artistic activity which appeared under Duke Rudolph IV. gave origin to a "Ducal Workshop." The attribution of many works to this school is, however, hypothetical, and the Ducal statues from the West Front of St. Stephen's, now in the City of Vienna Museum, are of somewhat different form. They are high, thin figures, the limbs too long, and with boldly conceived draperies. The large simple forms, through centuries of exposure, have been reduced to mere shadows of their former selves.

They form the transition to the fifteenth century, which, for Vienna, was to be a period of severe political disturbance and prolonged social troubles. During this time the completion of the building and decoration of the Cathedral was continued with the greatest energy; but the increased quantity corresponds to a falling off in quality. In contrast to the average examples from the other Alpine countries, the delight in decoration and the rich joyous phantasy are absent; it is a commoner—more citizen-like—art with impersonal features, expressed by the massive stone figures on the exterior and by the many wooden statues which are placed in the interior. Here and there single works rise to a higher rank. A Madonna as a protectress, the beautiful old motif in which clerical and worldly representatives take their position under the cloak of the Mother of God, full of tender maternal love. Or there may be a St. Sebastian—beside the organ screen—the sharply defined silhouette of which contains a tender charm. These are prominent examples of the work of a school which persisted till the close of the fifteenth century.

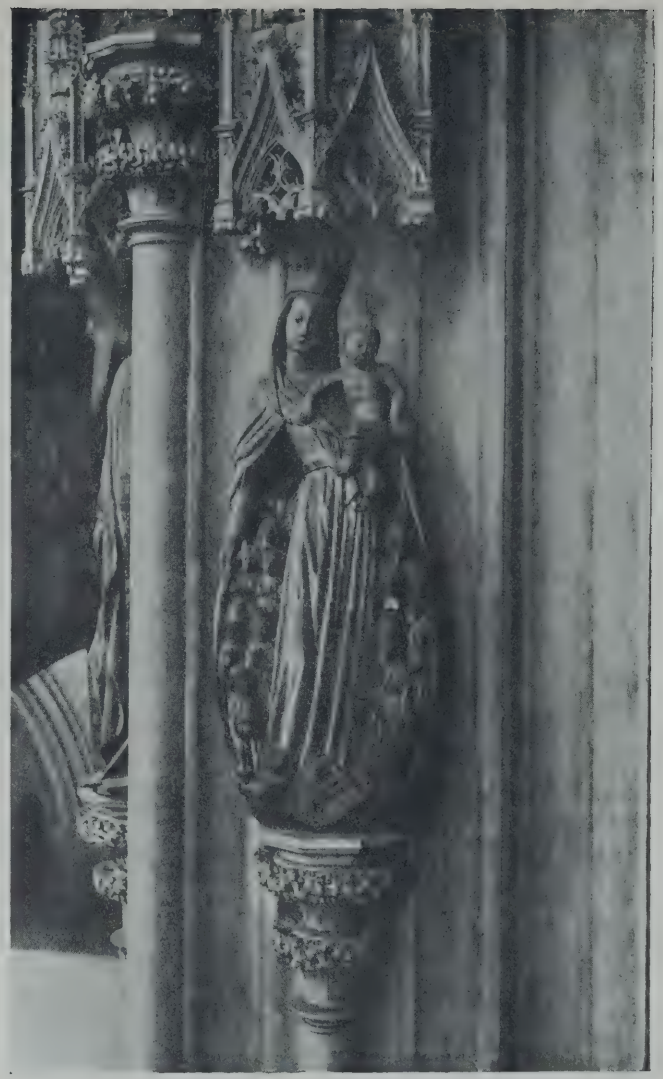
All these contrasts form the bases from which other remarkable works arise, but represent only one side of Viennese art. For other figures an influx of elements of the most varied origin is characteristic.

Sometimes the pattern came from abroad, another time it was the foreign artists themselves who travelled to Vienna, to work there and found schools. In 1467 the Emperor Frederick brought Master Niklaus Leyen from Strasbourg to Vienna, with a commission to prepare his tomb. Several years later, on All Saints' Day, 1513, and therefore long after the death of the Emperor (1490) and of the artist (1487), it was ceremoniously unveiled. It is a high tomb of red marble and considerable dimensions; around the sarcophagus runs a balustrade interspaced by semi-circular arches, the corner and separation pillars of which have figures of the saints in elegant niches. The tomb rests on a socle. On the terminal plinth of this, phantastic animals disport themselves. The walls are deepened, the reliefs representing the religious foundations established by the Emperor's generosity.

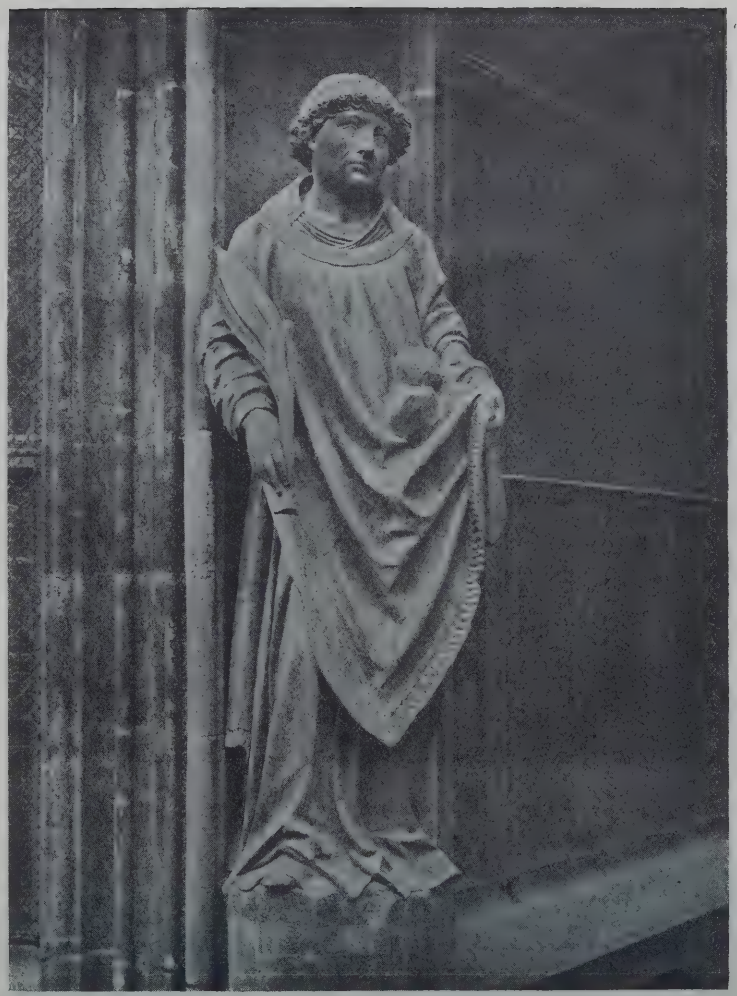
On the ground floor there is a monument, on the edge of which space has been found for mourning deacons, like their predecessors, the "Pleureurs" in French and Burgundian High Gothic monuments. They are occupied with censers, missals and musical instruments, with prayer and song. At the top is a high plinth, in the deep side chamfers of which the Austrian coat-of-arms is inserted, the upper surface being filled with the reclining figure of the Emperor in full coronation garb. This is a beautiful figure, combining representative dignity with individual vitality and appropriately surrounded by a border decoration of arms and heraldic animals. Decades were devoted to executing this work, in which every surface and border is covered with delicate filigree-like accessories. Many hands must have been actively employed, although it has not yet been possible to attribute the portions of the work to the different collaborators. Master Niklaus Leyen probably designed the whole and was most likely responsible for the real tomb plinth and the principal decorative piece. All the rest seems to have been done in the workshop, the director of which in later years was Master Michael Tichter.

Another artist's name is associated with the Cathedral pulpit, but this is probably incorrect. Anthony Pilgrim, the architect of the Cathedral, is not likely to have made it, as local tradition believes. The figures have posts connected with each other by luxuriant late Gothic tracery, and out of one shaft rises, chalice-like, the rich pierced lower end of the pulpit parapet. In this are inserted four hexagonal parapet portraits of the Latin Fathers of the Church. Above them there is thick tracery interlaced so as to form a thorny baldachin. The wooden sounding board above is made out of a heptagon and has a polychromatic relief on each side, representing the seven works of compassion. The Fathers of the Church, the most interesting details of the pulpit, are characteristic heads, not so much in the sense of deep spiritual individualism as of picturesque types full of expression. They are certainly not portraits of special persons, but are ideal representatives of the Catholic priesthood on the wave of the Reformation. One statue of great personal value is that of the artist, who leans out of his window under the pulpit,

Statue of a Duchess from St. Stephen's Cathedral
now in the City of Vienna Museum



The Holy Virgin as Protectress
Statue in St. Stephen's Cathedral, Vienna



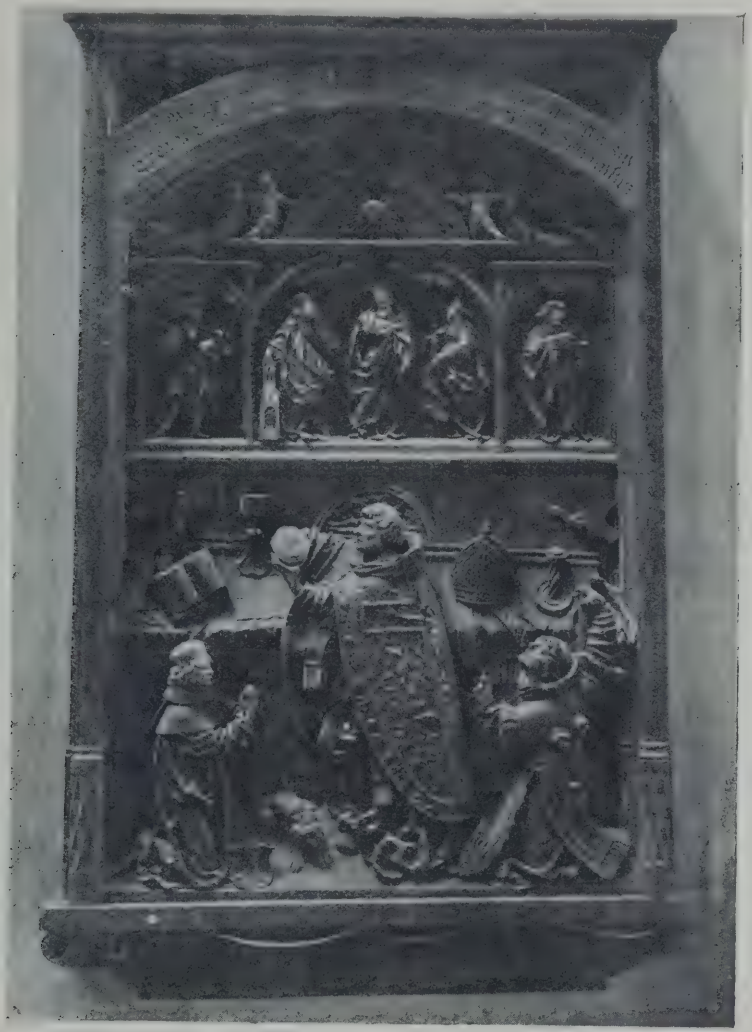
St. Stephen, Stone Figure on the Extfrior of St. Stephen's Cathedral, Vienna

The Bishop-Saint, detail from the Pulpit of St. Stephen's Cathedral, Vienna

a figure of remarkable and penetrating realism, which had several close companions in Vienna itself.

The decades about 1500 show increased artistic activity. Like the Viennese plastic work, which two and a half centuries previously grasped the Romanesque forms completely only when they had faded farther West, so Gothic only flourished here when it had been abandoned elsewhere.

The whole epoch of the Emperor Maximilian was still full of this effervescence, which is shown in the work on numerous tombstones, in which degenerate Gothic and incompletely understood Renaissance intermingle. The most pleasing work of this kind is the monument to John Keckmann. The abundance of rich tracery on the altar wall behind the Table and in the draperies, together with the memorial figure of the founder and his little dog, are of great interest in this beautiful work, which breathes the spirit of a transition period.



MONUMENT TO JOHN KECKMANN IN ST. STEPHEN'S CATHEDRAL, VIENNA

The Architect in History: his Training, Status and Work

Part II

BY MARTIN S. BRIGGS [*F.*]

(*Continued from page* 584)

V. THE RENAISSANCE IN ITALY.

In the periods dealt with hitherto, it has been found difficult to reconstruct the story of the architect owing to the scarcity of documentary records. With the dawn of the Renaissance there is a sudden and complete change, the amount of material available being almost embarrassing. The rift between the architect and the scribe vanishes, for the revival of learning not only brought about a brotherhood of all the arts and sciences (including literature), but it often made the architect something of a scholar. No longer was the chronicler a monk. If not always an architect himself, he was keenly in sympathy with architecture, and he was interested in everything that made for the advancement of learning and for the glory of his country and his *comuna*. In Italy the Renaissance of architecture provides such a galaxy of talent that, even for this short study, it becomes necessary to divide it into two sections. The simplest point of division occurs at Vasari's death; the early period including the architects from Brunelleschi to Michelangelo, and the later stage (commencing with Palladio, Alessi and Vignola) concluding in the eighteenth century. Not only is this a reasonable line of demarcation on the ground of architectural style, but it is suggested by the importance of Vasari's history,[111] which covers the ground up to 1550 or so in a way which has never been equalled, before or since, up to recent times.

We are indebted to Giorgio Vasari for personal or authentic reminiscences of every great figure from about 1400 to 1550. The lengthy studies of architects included in his *Lives of the Artists* contain descriptions of their work and anecdotes of their lives, but often relate incidents which are immaterial while omitting information which would be valuable. Thus it is interesting rather than vital to know that, in extreme old age, Jacopo Sansovino could "eat three cucumbers and a lemon at one time";[112] or to ponder for twelve pages on the absurd menus concocted for Rustici's eccentric dinner-club;[113] or even to be told that "the society of ladies was acceptable" to another famous practitioner.[114] For, as will appear later in this chapter, Vasari still leaves us in the dark on many aspects of the architect's education, status and work. In his own autobiography he tells us[115] how his famous book was brought into being. It was his habit, after his day's work was done, to go to supper at Cardinal Farnese's house in Rome, where were gathered many *literati* and men of distinction. On one occasion an eminent guest, a Cardinal, spoke of the need that there was for some authoritative biography of the leading artists to be written. Cardinal Farnese then asked Vasari what he thought of this suggestion. The ever-cautious Giorgio expressed his approval, provided that the writer could "be assisted by some one belonging to our calling" (an opinion which would be shared by every architect who has read modern books on architecture written by literary laymen). Vasari was then asked if he would undertake the collection of facts and material himself. He agreed to do so the more readily as (by a curious chance) he had begun this very work as far back as his youth. On taking his material, a year or so later, to the Cardinal who had first suggested the book, he was then asked to undertake the whole thing himself, as he subsequently did with such success that it has become a classic. He seems to have commenced the work about 1546, first intending to publish it anonymously, but it appeared under his own name in 1550, and he lived to revise it for a second edition before he died in 1574. Vasari is prolix and conceited at times, but his work, like Boswell's, is something more than a mere record of the doings and sayings of men greater than himself.

In this essay it is only possible to generalise as to the life of the average Italian architect. Of some 32 men mentioned by Vasari who practised architecture, either singly or with one or more other arts, we find that 11 were architects pure and simple; 11 are described as "sculptor and architect"; 6 practised architecture and painting; 3 were versed in all three arts; and one is styled "architect and engineer." The prevailing and striking characteristic of this wonderful age was versatility, as will be shown later.

The education of the young architect depended very much upon the circumstances of his birth, upon his parents' ideas for his vocation, and as to whether he began his career primarily as an architect or not. In the 17 cases of which particulars are given by Vasari, we find that three architects (Raphael, Falconetto and Da Carpi), were the sons of painters; three (Alberti, Rustici, and Jacopo Sansovino) "of noble birth"; two (Bramante and Michelangelo) "noble but poor"; four (Giuliano Sangallo, Antonio Sangallo the Elder, Bartolommeo Genga, and San Micheli) were sons of architects; Andrea Sansovino was the son of a farm-labourer, Giuliano da Majano of a mason, Lorenzetto of a bell-founder, Aristotile Sangallo of a cooper, Tribolo of "a poor carpenter"; and Peruzzi, though his parents are stated by Vasari to have been of noble birth if poor, is now believed to have been the son of a weaver.[116] These miscellaneous fathers appear to have had all the perplexiti s and prejudices of a modern parent as to the destiny of their sons. Thus we find Michelangelo's father actually beating him because he wished to be an architect, thinking

[111] G. Vasari, *Le Vite de' più eccellenti Pittori, Scultori, ed Architetti* (Firenze, 1550). The references in this essay are to the English edition in Bohn's Library (London, 1907.)

[112] Vasari, *op. cit.*, V, p. 426.

[113] *Ibid.*, V, 425.

[114] *Ibid.* 72-83.

[115] *Ibid.*, V, 531-3.

[116] *Ibid.*, II, 158; F. W. Bedford, *Baldassare Peruzzi*, R.I.B.A. JOURNAL, Vol. IX. (1902).

the profession unworthy of his family.[117] Brunelleschi and Giuliano da Majano were intended for the law, Primaticcio and Jacopo Sansovino for business, Girolamo Genga for weaving, and Andrea Sansovino began life as a farm-boy. Antonio Sangallo the Younger and Tribolo were apprenticed to carpenters; Giuliano Sangallo and Antonio Sangallo the Elder to woodcarvers; Bramante, Raphael, da Carpi, Vasari, and Aristotile Sangallo to painters; and there are only two, Bartolommeo Genga and San Micheli (both architects' sons) of

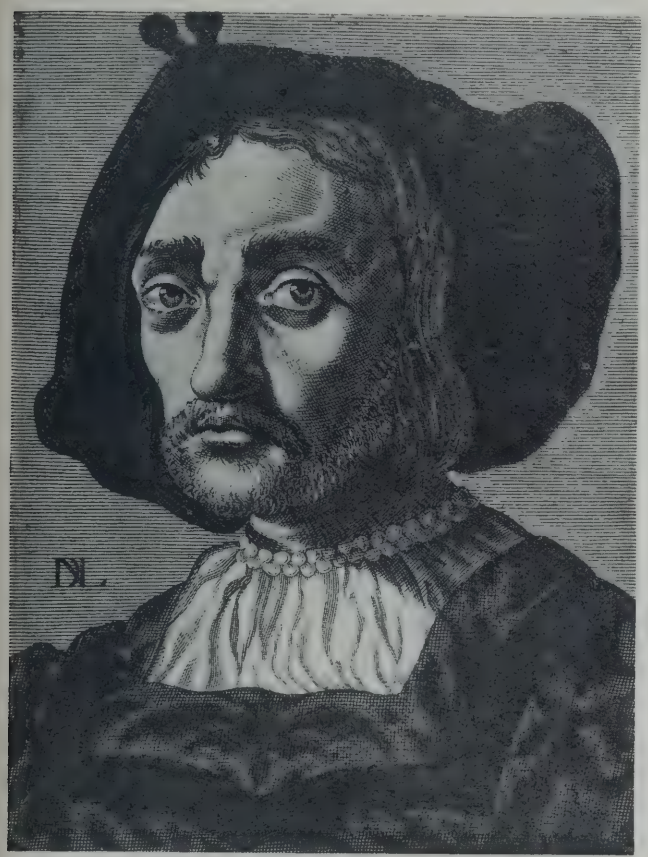


Fig. 8.—Portrait of Bramante, from an Old Print

whom we know without a doubt that they were intended for architecture from the beginning. It therefore follows that it is hard to generalise as to the system of architectural training then in vogue. It appears that some of the more fortunate youths had a measure of general education: thus Bramante, though intended to be a painter, "studied arithmetic zealously";[118] Niccolò was nicknamed *Il Tribolo* ("thistle" or "tormentor") because at school he proved "a very devil" and made no progress;[119] and Bartolommeo Genga, an architect's son, pursued general studies till he began his professional training under his father at 18.[120] Those who were destined for the legal profession or for commerce seem to have been sent to school: thus, Michelangelo "on attaining the proper age" was sent to "the school of grammar kept by Messer Francesco of Urbino,"[121] and others, like Alberti and Fra Giocondo, who turned to architecture from academic surroundings, evidently had a lengthy and extensive general education.

In none of Vasari's biographies of architects is there any mention of a school where architecture was taught, but most youths are stated to have been apprenticed or articled to an architect in practice. This was also the custom for painters and sculptors, and the form of articles drawn up between Michelangelo's father and the painter Domenico Ghirlandajo, when Michelangelo was apprenticed at the age of thirteen, is presumably typical:

"I record this 1st of April (1488) how that I, Lodovico di Lionardo di Buonarrota, bind my son Michelangelo to Domenico and Davit di Tommaso di Currado for the next three ensuing years, under these conditions and contracts: to wit that the said Michelangelo shall stay with the above-named masters during this time, to learn the art of painting, and to practise the same, and to be at the order of the above-named; and they, for their part, shall give him in the course of these three years 24 florins; to wit, 6 florins in the 1st year, 8 in the 2nd, 10 in the 3rd, making in all the sum of 96 pounds."

But Michelangelo's father was a man in a good position, and though doubtless the architects' sons mentioned above were well trained by their fathers, other youths who were less fortunately placed had to pick up their knowledge as best they could, until their talents by good luck came to the notice of one of those noble patrons of the arts who could do so much for the career of a poor lad. Whatever their original intentions, these youths eventually entered architecture as a rule because they showed a taste for drawing. Other studies which they pursued appear to have been geometry, perspective, mathematics, and mechanics.

But most remarkable of all is the amazing zeal and energy with which they prosecuted their study of the antique. Almost every famous architect whose life is described in detail by Vasari, even the poorest of them, somehow contrived to spend long periods, often many years, in measuring and drawing the antiquities of Rome, and even in making "restorations" of the ruins. Brunelleschi went there with Donatello at about 25 years of age, sold a farm to provide funds, and when these were exhausted took up gem-setting in Rome to maintain himself while measuring.[122] Overwork in the bad climate of the Campagna put an end to his studies (this being a frequent incident in Vasari's lives). Bramante was not able to get to Rome till he was over fifty, when he had saved enough to settle there for the sole purpose of study.[123] Fortunately he also picked up a large practice there. Raphael's paintings display his wide knowledge of Roman architecture. Cronaca obtained his name ("chronicler") from his constant talk in Florence about Roman antiquities.[124] Falconetto spent twelve years studying the ruins of Rome, financing himself by working for other painters two or

[117] A. Condivi, *Vita di Michelangelo*, I, 5 (Roma, 1553).
[118] Vasari, II, 427. [119] *Ibid.*, IV, 173. [120] *Ibid.*, IV, 409.
[121] *Ibid.*, V, 229. [122] *Ibid.*, I, 422-4.
[123] *Ibid.*, II, 430. [124] *Ibid.*, II, 80.

three days a week ;[125] he also travelled to Pola to study the Roman buildings there. San Micheli, an architect's son, was sent to Rome in his sixteenth year, and his studies there were so much appreciated that they obtained for him an appointment in charge of the cathedral at Orvieto, " with a most honourable stipend."[126] Other names might be added to this list. A quotation from Vasari shows how hard students worked in his day in Rome[127] :—

" And to the end that each of us might have drawings of every work, we did not copy the same thing on the same day, but different ones, and when night came we copied each other's drawings for the purpose of saving time, and also to advance our studies ; nor did we ever breakfast in the morning, except on what we ate while standing, and that very frugally."

Rome was the Mecca of the ambitious student, as of the practising architect, and every youth aspired to become assistant to an architect in Rome.

But every famous architect did not limit his activities to architecture. We are constantly impressed by his versatility. Leonardo da Vinci is sometimes regarded as the Admirable Crichton of the Italian Renaissance. He was " painter, poet, sculptor, architect, mechanist, mathematician, philosopher, and explorer. He also studied botany and anatomy, was an admirable performer on the lyre, and the first scientific writer on his special art of painting."[128] Yet his surviving work is not to be compared with that of Michelangelo or Peruzzi, and as an architect he did little. Most of the great artists of the Renaissance were many-sided men, with the intense intellectual curiosity and love of learning for its own sake that distinguished their period and country. Many of them dabbled in music and poetry, several of them wrote books (though not so freely as in the next period), and most of them combined the artistic and the practical to an extent noteworthy for us to-day. There was no hard line between " science " and " art " : mathematics, mechanics, and geometry were an essential part of the architect's equipment, and even in his researches into antiquity he was as much concerned with the composition of Roman stucco and the bonding of Roman masonry as with the proportions of cornices and the details of mouldings. He passed with apparent ease from one craft to another, and his ability to do so can only be explained by inexplicable genius. Occasionally one finds an ambitious man with a fixed object in mind : thus the versatile Brunelleschi is said to have decided quite early in life to revive Roman architecture and to complete the unfinished Duomo at Florence. Rapidly running through painting, mechanics, goldsmith's work, gem-setting, architecture, carving, classical studies, inlaying, geometry, the Scriptures, and Dante, he attained both his objects at the last.

Even more startling is the career of Fra Giocondo, a learned friar who, in the course of a long life, almost boxed the intellectual compass. Having excelled in philosophy, theology, and Greek, he made a model for a bridge while still acting as a pedagogue, became proficient in perspective, studied the Roman ruins and wrote a book on them, edited Cæsar and Vitruvius, discovered and edited Pliny's letters, built two bridges at Paris, carried out other architectural work in France, took a hand in the erection of St. Peter's, designed a whole system of drainage for the Venetian lagoons, and finally evolved a town-planning scheme for the Rialto district of Venice. Knowing that he also practised agriculture and gardening, one can only accept with gasping admiration the (unusually) apt definition of one of Vasari's translators, that he was " a man of universal attainment."[129]

The status of the architect in this period depended solely on his ability. His social position in Italy could be what he made it, and there was no limit to the heights he might attain. Architects held high positions as magistrates and councillors ; they were held in honour by Popes, cardinals, and the great princes of the Medici house. Raphael, we are told, lived " the life of a prince, not that of a painter " ;[130] on the other hand, Antonio Sangallo was afflicted with a wife (married in haste against the wishes of his family) who " lived rather in the manner of a most splendid lady than of an architect's wife," and made extravagant demands upon his otherwise ample income.[131] About 1423 we come across the mention of a woman-architect, probably an amateur, " of the Gaddi family, who ventured to place her knowledge in competition with that of Filippo " (Brunelleschi).[132]

An important part of an architect's duties in Italy at that date was military engineering, and it is hard to realise that the same man might be designing fortifications one day and painting Madonnas or carving crucifixes on the morrow. Brunelleschi, Michelozzi, Bramante, the Sangalli, Peruzzi, the Genghi, Michelangelo, and, especially, San Micheli, all carried out such work. They also designed and supervised the erection of triumphal arches, theatrical scenery, and similar pasteboard architecture ; and there is one intensely amusing story in the life of Tribolo the troublesome, relating how a great " set-piece " of fireworks, the *Girandola*, blazed up instead of burning for an hour, and so diminished the reputation of poor Tribolo, who had insisted that such things should be designed by an architect and not by " simpletons."[133] Other work assigned to architects included the restoration of old buildings, garden design, a " sham " ruin,[134] and, in one disgraceful instance, a relief map of Florence, made by that Florentine black sheep Tribolo to enable the Pope to use his artillery against the architect's native city.[135]

An architect obtained his work then, as nowadays, either by personal interest or by competition (usually limited). Personal interest was largely confined to the Pope and his cardinals, and to princely patrons like the Medici. One often reads of architects living in close touch with such celebrities and even following them into exile when their stars waned. San Micheli and Antonio Sangallo were sent on a long tour by Pope Clement VII to examine and report on the fortresses of the Papal States.[136] Some architects undertook work abroad—*e.g.*, Michelozzi designed a hospital at Jerusalem for the Medici ;[137] Andrea Sansovino worked for the King of Portugal for nine years ;[138]

[125] Vasari, III, 436-7. [126] *Ibid.*, IV, 419.
[127] *Ibid.*, V, 505.
[128] H. Ricardo, in *The Cardinal Medici's Pleasure-House*, in R.I.B.A. Journal, XVIII, 6 (1911).
[129] Vasari, II, 394. [130] *Ibid.*, II, 63. [131] *Ibid.*, IV, 24.
[132] *Ibid.*, I, 446.
[133] *Ibid.*, IV, 211-13. [134] *Ibid.*, IV., 404. [135] *Ibid.*, IV, 179.
[136] *Ibid.*, IV, 419. [137] *Ibid.*, I, 506. [138] *Ibid.*, II, 121.

Photo. Brogi

FIG. 9.—A SKETCH BY BRAMANTE, IN THE UFFIZI GALLERY AT FLORENCE

San Micheli designed fortresses in Dalmatia, Corfu, Cyprus, and Crete ;[139] Primaticcio settled in France,[140] and Fra Giocondo worked there ;[141] and Bartolommeo Genga designed fortifications, a town-plan, and many palaces and churches in Malta, for the Knights.[142]

Competitions seem to have been arranged usually by invitation, and were often resorted to not only for large buildings and schemes, but even for parts of buildings, such as the dome and the bronze doors at Florence, and the cornice of the Farnese palace at Rome. As nowadays, competitions often gave rise to bickering and bad feeling among the architects concerned.

Their relations with their clients were, naturally, not always harmonious. Sometimes a new Pope was disinclined to continue large schemes inaugurated by his predecessor or to accept the predecessor's architect. Michelangelo's adventures at St. Peter's are well known. He was an old man in a very privileged position, and a younger architect would have hesitated to talk to high ecclesiastics as he did, or to run the risk of killing the Holy Father by dropping a plank from a scaffold near his head.[143] Michelangelo at first declined to accept the work at St. Peter's, and finally agreed to do so only on condition that he received no fees for it, and that he had *carte blanche* in all matters requiring decision.[144] A contract with him, based on these terms, was renewed by successive Popes. It appears that architects were often engaged on precise agreements. Sir Thomas Jackson's statement that they sometimes acted as builders too[145] does not seem to apply to many cases.

Their remuneration is frequently mentioned, either in the form of a salary or as fees ; and sometimes additional perquisites, exemptions, and privileges are cited. The architect was occasionally resident on the work, and when Andrea Sansovino was so employed at Loreto he was allowed four months' leave each year, which he spent on his farm.[146] But for the most part they were independent practitioners, and a family practice, descending from father to son or nephew, is often mentioned by Vasari. The families of Sangallo, Sansovino and Genga are examples of this. We are told very little of the architect's staff, but it is certain that it included the counterparts of modern pupils and assistants, who acted as deputies on works in progress as well as being draughtsmen. Drawings were used, models still more so, and Vasari contrasts a model made by Michelangelo for 25 crowns with another made by Sangallo which had cost 4,000 crowns.[147]

The few architects who wrote books usually took Roman architecture as their theme. But Sansovino the Younger wrote a treatise on floor construction. On other aspects of practice the pages of Vasari furnish a mine of information which cannot even be mentioned here.

For the later and " Baroque " periods of the Renaissance our information is largely derived from Milizia, a scholar whose work on the lives of famous architects first appeared in 1768.[148] Though not himself an architect, he is a keen and unsparing critic, much more so than Vasari. He seldom condescends to give us the amusing and trivial incidents of life as Vasari does ; nevertheless

[139] Vasari, IV, 422. [140] *Ibid.*, V, 371. [141] *Ibid.*, III, 388-9.
[142] *Ibid.*, IV, 413-14. [143] *Ibid.*, V, 251. [144] *Ibid.*, V, 294.
[145] T. G. Jackson, *Renaissance of Roman Architecture : Italy*, pp. 147-8.
[146] Vasari, III, 128. [147] *Ibid.*, V, 293.
[148] F. Milizia, *Vite degli Architetti più celebri* (Roma, 1768). The references given here are to Mrs. Cresy's translation (London, 1826).

on one occasion he tells us that an architect, who was old enough to know better, died of eating too much iced melon.[149] By summarising facts from his lengthy volumes, one is enabled to make comparisons between conditions

it appears that architects usually came from the upper and professional classes; thus, of some 30 typic l examples, only four appear to have been the sons of artisans, whereas nine were architects' sons, three the

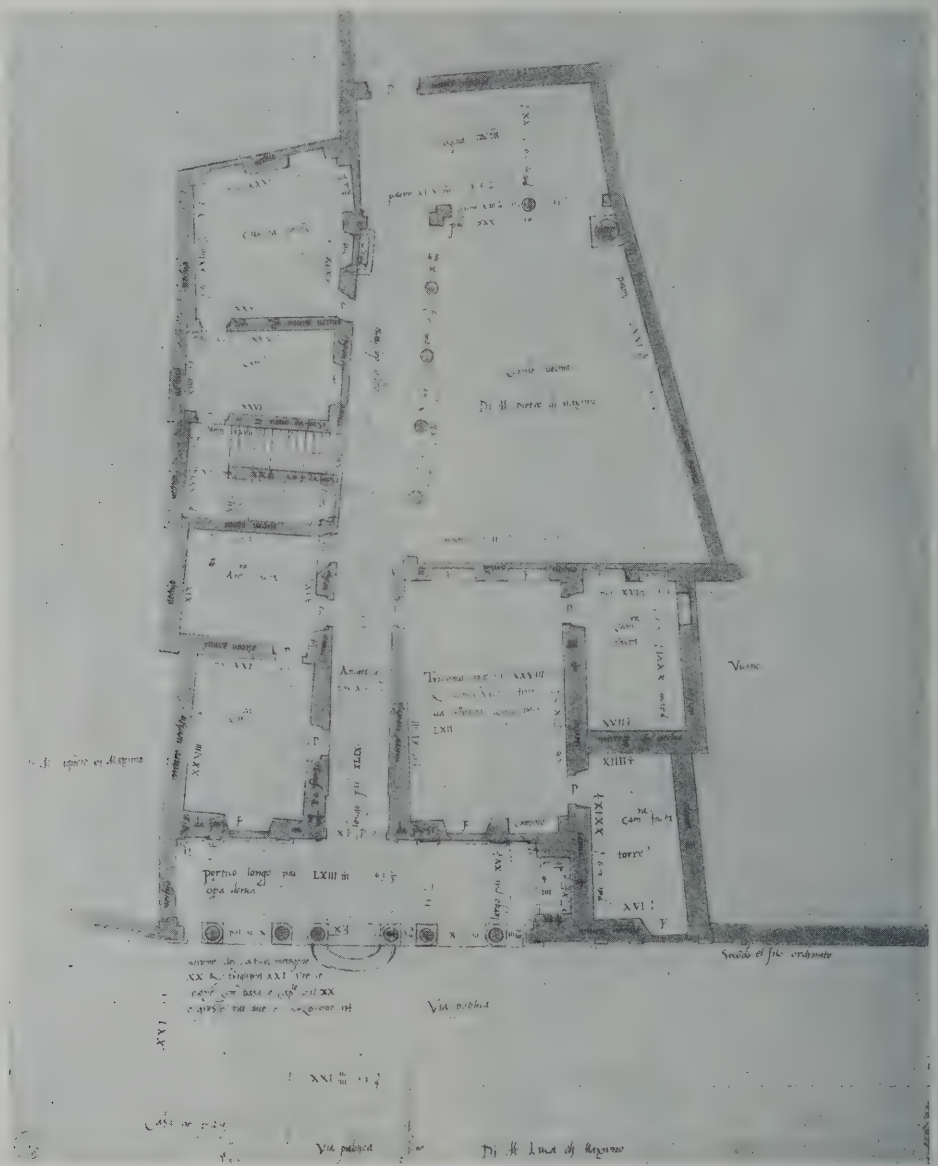


Photo. Brogi

FIG. 10.—PLAN BY PERUZZI IN THE UFFIZI GALLERY AT FLORENCE (apparently a sketch-design for the Palazzo Massimi in Rome)

obtaining in the period 1550-1750 with those already described.

As one might expect, in that essentially aristocratic age,

sons of painters and sculptors, and the remainder "well-born." More than a third of them were Lombards, the proportion of Florentines and Tuscans being much less than in earlier days, and the number of Romans being small; one only, Vanvitelli (Van Witel), coming to

[149] Vasari, II, 93.

Italy from abroad. Many entered the profession from other walks of life; thus, out of 50 or 60 lives examined, seven men entered architecture from other branches of art, three from the study of letters, one or two from the law, one was a builder, another a mason, another an engineer in the army, and three came from the Church (though Milizia states[150] that Juvara, one of them, assumed the ecclesiastical habit solely with a view to studying architecture). Father Pozzo, the author of the maddest architectural designs that ever appeared in print, began as a Jesuit cook, then successively practised painting, perspective, and architecture.[151]

Training continued to be chiefly by means of pupilage or apprenticeship, supplemented by exhaustive measuring and sketching of Roman antiquities. Subjects of study, besides drawing, included especially mathematics, geometry, perspective, and mechanics, but literary subjects are frequently mentioned. Architectural studies were sometimes commenced at 12 years of age. Milizia relates that one Teodoli, a marquis by birth and an architect by profession, "being desirous of taking pupils, selected young men of the best capacity, whom he instructed with the greatest possible kindness" . . . "His theory was good, and his manner of teaching excellent."[152]

A pleasing incident is related by the same writer. Domenico Fontana, being occupied with other work, entrusted the design of a church to his pupil or assistant Rainaldi. The design was shown to the Pope, who admired it. Fontana gave the full credit for it to Rainaldi, whose fortune was thereafter assured.[153] Schools of architecture seem to have been established during this period. Some were apparently no more than gatherings of pupils in architects' offices, but Milizia states that the architect Francesco Bibiena taught geometry, perspective, mechanics, and surveying in the Academy at Bologna;[154] and that "a chair of civil architecture" was founded at Padua in the eighteenth century.[155] But the Italian academies of architecture do not appear to have reached a high standard.[156]

The status of the architect was now clearly defined, and though he sometimes dabbled in painting and sculpture, he generally confined himself to one art. No longer is there any chance of confusing him with the builder, for the two occupations are differentiated, as when we are told that Silvani, the architect, aged 96, ascended the winding stair of a *campanile* in company with the builder, aged 100.[157] Yet one architect came to grief over his alleged maladministration of clerical building funds.[158] The design of fortifications, theatrical properties and scenery, gardens and bridges, formed a part of the architect's normal duties, and he continued to be a versatile man. One may safely award the palm for many-sidedness to Guidotti of Lucca, who practised architecture, painting, sculpture and body-snatching; studied mathematics, astrology, law, music and poetry; and finally broke his thigh in a flying accident, after covering a quarter of a mile on wings of his own design at a public display.[159] Many architects during this period made large fortunes; they were well paid and well treated. On one occasion Bernini was visited by the Pope and sixteen cardinals at his house; on his famous visit to Paris he was treated like a monarch. Tibaldi forsook painting for "the more lucrative profession of architecture."[160] Italians were frequently summoned abroad by the kings of other states, including England, and one architect

Photo. Brogi

FIG. 11.—SKETCH OF AN ALTAR-PIECE BY BERNINI

went as far as Persia. They continued to have sordid disputes at times with their clients, clerics or laymen, and to use models in design; thus Carlo Fontana sent models for a cathedral to Fulda (in Bavaria) and for royal stables to Vienna.[161]

But specially characteristic of the period was the large number of books written by architects, from the time of Vignola and Palladio to that of Scamozzi. These were mainly treatises on the Orders, about the merits of which our profession will doubtless quarrel till Doomsday.

[150] Vasari, II, 307. [151] *Ibid.*, II, 253. [152] *Ibid.*, II, 329.
[153] *Ibid.*, II, 197. [154] *Ibid.*, II, 263. [155] *Ibid.*, II, 369.
[156] *Ibid.*, II, 132. [157] *Ibid.*, II, 172. [158] *Ibid.*, II, 84.
[159] *Ibid.*, II, 150. [160] *Ibid.*, II, 60. [161] *Ibid.*, II, 265.

VI. THE RENAISSANCE IN FRANCE.

A collection of biographies of French architects, from the Middle Ages to his own day, was written by Quatremère de Quincy nearly a century ago,[162] yet though it tells us much of his own not very valuable opinions about their buildings, it fails to present us with a vivid picture of their lives and methods of work. Sir Reginald Blomfield considers[163] that Quatremère de Quincy was " one of the most ferocious and dogmatic pedants that ever lived." But the *lacuna* in English architectural literature concerning the French Renaissance has been amply filled during the past fifteen years by the publication of important books by the late Mr. W. H. Ward,[164] Sir Reginald Blomfield,[165] and Sir Thomas Jackson,[166] in all of which the position of the French architect has received attention, Sir Reginald Blomfield especially having treated the subject in great detail.

Even for the purpose of this brief study it is convenient to divide the period into three stages : the first lasting up to the appearance of the professional architect about 1550, the second from that date up to the foundation of the French Academy of Architecture in 1671, and the third to the end of the eighteenth century. As was the case in England, mediæval architecture and mediæval methods persisted at least a century later than in Italy. The mediæval master-mason is therefore found in France up to 1550 or so, and of his status during the preceding century, when so many wonderful buildings were erected in France, singularly little is known. The problem is greatly complicated by the fact that there was a constant influx of Italian artists into France for fifty years from 1494, when the French invasion of Italy made the king and his courtiers familiar with the buildings of the Renaissance in the latter country. Among these artists were several architects, notably Fra Giocondo,[167] Domenico da Cortona, and Serlio. It has been contended[168] that the influence of these men on French architecture was slight, that the amount of building executed by them was almost negligible, and that such architectural masterpieces as the *châteaux* on the Loire only became strongly influenced by Italian *motifs* at a time when most French architects studied and measured for themselves in Rome. Sir Thomas Jackson[169] is inclined to discount this patriotic view ; nevertheless there is some justice in it, and to the present writer the evidence of the Loire *châteaux* forms a strong argument in its favour. While allowing full credit to the Italian decorative artists for their work at this period, it seems reasonable to conclude that the vast output of fine building all over the country was mainly and almost entirely due to French architects, such as the families of Chambiges, Le Roux, and Le Breton. Sir Thomas Jackson may be right in inferring[170] that the fact of architecture running in families presupposes that there was something material to inherit (such as a builder's yard, plant, stock and capital), but he does not envisage the considerable value of a hereditary architectural practice ! The architect may conceivably have acted sometimes as the builder too, yet early in the sixteenth century he was styled " architect " and was working as such. But at all events it is certain that he, master-mason or architect, designed and supervised the erection of the building. Of his training and status we know practically nothing. Probably he learned his craft in mediæval fashion, as described in Chapter IV. He may have travelled in Italy, perhaps in the train of the army, or he may have imbibed Renaissance ideas from Italian artists working in France.

But with the advent of Philibert Delorme (1515–70) we find the training, status, and methods of the architect closely approximating to those of his professional brethren in Italy. A comparison of the somewhat fragmentary biographies of the eight principal French architects of the period 1550–1671 shows that six of them were sons of men connected with architecture and building, and that only one is known to have entered architecture late in life (*i.e.*, Pierre Lescot, who was previously in Parliament).[171] The " architectural family " is characteristic of France at this date—*e.g.*, in the families of Du Cerceau, Mansart, and Métezeau. Not less noteworthy is the violent craze for the antique that led every ambitious student to Rome to study and measure the ruins there. Of the eight architects mentioned, only one (François Mansart) is recorded as never having visited Rome ; of two more (De Brosse and Baptiste du Cerceau the Younger) nothing is known ; and the remaining five certainly or probably studied there. The publication of Vitruvius in French in 1547 was perhaps the chief cause of this tendency, though doubtless the Italian campaigns of 1494 also influenced it.

As in Italy, the architect found his most valuable clients among cardinals and courtiers. It is interesting to note, however, that several prominent architects were Protestants during these troubled years, and that one of them (Salomon de Brosse) designed churches for both Catholics and Protestants.[172] In 1542 Jean Goujon, as penalty for having attended a Lutheran service, was condemned to walk through the streets in his shirt and to attend the burning of the preacher.[173] Then, as now, the " lady-client " sometimes provided a thorn in the architect's flesh, by claiming that she had drawn her own plans, and so depriving her architect of his due credit.[174] (We can only infer the nature and value of those plans.) The " pushful " architect appears in an early story of Philibert Delorme, who first attracted the attention of his cardinal-patron by means of a smart ruse worthy of Dinocrates. But, like Dinocrates, Delorme proved to be a very able man, combining a wide knowledge of construction with his mastery of the Orders, and devoted the leisure hours of a busy life to writing books on both subjects.[175] The literary architect was, indeed, a feature of the period.

[162] Quatremère de Quincy, *Histoire de la Vie et des Ouvrages des plus célèbres architectes*, 1100-1800. (Paris, 1830.)
[163] Blomfield, *A History of French Architecture*, 4th volume, p. 198. (London, 1921.)
[164] Ward, *Architecture of the Renaissance in France*. (London, 1911.)
[165] Blomfield, *op. cit.*
[166] Jackson, *The Renaissance of Roman Architecture : France*. (London, 1923.)
[167] See above.
[168] Palustre, *La Renaissance en France*, vol. i. (Paris, 1892.)
[169] Jackson, *op. cit.*, pp. 72-82.
[170] *Ibid.*, p. 87.
[171] *Ibid.*, p. 116.
[172] De Quincy, *op. cit.*, i, p. 244.
[173] Jackson, *op. cit.*
[174] Ward, *op. cit.*, i, p. 216.
[175] *Nouvelles Inventions de bien bastir et à petitz frais* (1561) ; *L'Architecture* (1567).

Thus, of the eight architects taken as typical of their time for this essay (besides Delorme), Bullant wrote a treatise on the " Rules of Architecture " (1564), J. A. du Cerceau the Elder produced a great work, *Les Plus Excellents Bastiments de France* (1576–9), and Salomon de Brosse found time to re-edit Bullant's book (1619).

The range of the architect's work was wide, including

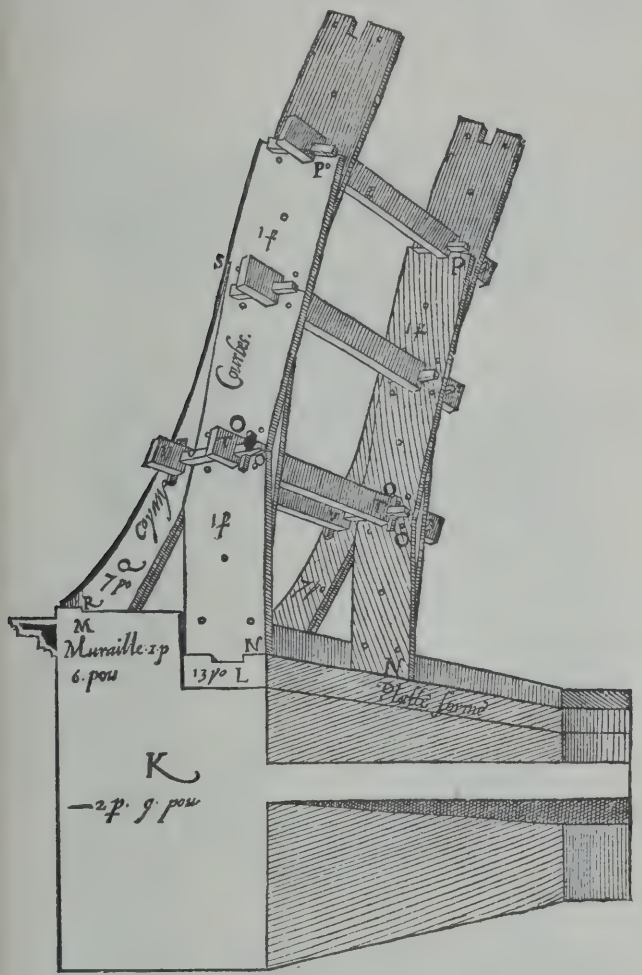


Fig. 12.—Detail of a Roof-truss by Philibert de l'Orme (*Nouvelles Inventions pour bien bastir et à petitz frais.* 1561)

town-planning, designs for formal gardens and furniture, civil engineering, and military architecture. The amount of building done by the Crown was prodigious, though surpassed in the later stage of the Renaissance. Architectural competitions are not prominent in the history of the period, but an architect sometimes consulted others, and when Salomon de Brosse was preparing sketch-designs for the Luxembourg (1616) he sent the one which the Queen preferred to Italy " and even to other countries," in order to obtain opinions and criticism from the most prominent architects of the day.[176] There seems to be no doubt that in the middle of the sixteenth century the architect in France was a recognised functionary, distinct from the builder on the one hand, and the owner or his comptroller on the other, and definitely in charge of other craftsmen and artists employed. François Mansart, for example, was fastidious, impatient of control, and vain of the high social position that he, like most famous architects of the day, enjoyed. Sir Thomas Jackson[177] gives some instances of the salaries paid to the King's architects ; thus Salomon de Brosse was receiving 2,400 livres at the Louvre in 1618, and Lemercier (then a young man) 1,200 livres, the respective equivalents of these in " pre-war " purchasing power being estimated at about £1,700 and £850, and therefore presumably about £2,800 and £1,400 to-day. Delorme, who died in 1570, held several ecclesiastical offices, apparently sinecures, and had an income estimated at £2,000 a year (" pre-war ").[178] It is therefore clear that the chief French architects of the Middle Renaissance were flourishing as well as famous men.

The foundation in 1671 of the Academy of Architecture has been taken, in this essay, as a dividing point of the period, for it marked the close connection between architecture and the State that existed under Louis XIV and his powerful minister Colbert. " Through Colbert's elaborate organisation," writes Sir Reginald Blomfield,[179] " all the best artistic ability of the country was mobilised in the King's service and was under his direct, almost personal, control." An Academy for painters and sculptors had been established in 1648, intended " not only to promote the arts of painting and sculpture, but also to instruct and train students,"[180] who had to pay fees. In a short time the students began to complain of laxity in the administration, and in 1662 they mutinied and established rival schools of their own, which may be regarded as the embryo of the famous French *atelier* system.

The first members of the Academy of Architecture were all practising architects. It seems to have grown out of a small consultative committee appointed to superintend the building of the Louvre, but it had for its principal object the instruction of artists. Its members met weekly to discuss problems of design or construction, and acted as a kind of Court of Appeal for all questions that perplexed architects. On the one hand it laid down a code of orthodox practice in regard to the Orders, but it performed a more useful and apparently more congenial service in settling abstruse problems met with in building —*e.g.*, concerning the strength of foundations and the construction of domes. The members drew a fee of 11 livres apiece (say 3 or 4 guineas in modern values) for each meeting that they attended. Their work had an influence in consolidating professional status, for architectural practice was attempted even at that time by the master-builder and the " gifted amateur." In 1699 the Academy was finally organised, consisting thereafter of seven architects of the first class, seven (later ten) of the

[176] De Quincy, *op. cit.*, i, p. 144.
[177] Jackson, *op. cit.*, p. 144.
[178] *Ibid.*, p. 97.
[179] Blomfield, *op. cit.*, I, 6.
[180] *Ibid.*, I, 7.

second class, a third class of a somewhat inferior grade, a professor, and a secretary.

The travels of students in Italy were not recognised officially until 1666, when the French Academy at Rome was founded, consisting of 12 young artists, among them two architects. They were to be subject to strict discipline and they lived in collegiate fashion. "They were to get up at five in the summer and six in the winter, and go to bed at ten, not omitting to say their prayers. They were to devote two hours a day to the study of arithmetic, geometry, perspective, and architecture." (This applied to painters and sculptors as well as to architects.) "The architects were to make plans and elevations of all the fine buildings in Rome and its neighbourhood."[181]

They also acted as collectors of pictures and antiquities on behalf of their royal patron! For it must be remembered that this French Academy at Rome was established primarily in the interests of the State, to create a supply of well-trained young artists for the royal service. A winner of the *Prix de Rome*, on returning from Italy, was guaranteed employment by being appointed to the charge of some historical building. But the directors of the Academy at Rome became sycophants or art-dealers, neglecting their main duties, and the number of students decreased to six in 1723 and was only eight in 1735. Possibly owing to this lack of guidance, they sometimes studied buildings very alien to the orthodox ideals of the founders, and Oppenord's extravagances were apparently derived from his sketches of Borromini's wildest aberrations.

Yet as we read the lives of famous French architects between 1660 and 1800 we find little evidence of the Academy's educational activities. Out of a dozen architects selected as typical of the period, only three are known to have studied in Rome at all, and one of them (Servandoni) was a painter in his youth. Of three more nothing is known, but their names may be added fairly safely to those of the six who were never in Italy. The circumstances of their early life are worthy of attention. Of the dozen architects mentioned, six were the sons of men connected with architecture or the building crafts, two of lawyers, and the remainder were sons of a painter, a gardener, a carrier, and a tradesman respectively. Curiously enough, both the lawyers' sons (Perrault and François Blondel) entered architecture at the mature age of 52. Perrault was a learned man, and in many ways his career resembles Wren's. He was trained for medicine, took a doctor's degree in medicine and philosophy, and was also well versed in literature and mathematics. His brilliant success as an architect may be ascribed to a combination of great natural ability and an extremely thorough scientific education. But neither he nor Blondel had anything like an architectural training; another famous architect began life as a mason, yet another as a painter; and of all the twelve architects now under consideration, we only know that one was probably taught by his architect-father, and that two more studied at the Academy in Rome.

The "architectural families" of Hardouin, Gabriel, Mansart, Bruand, and Le Vau continued a tradition already mentioned in this chapter as characteristic of the Renaissance in France.

Although the French architects of the late seventeenth and the eighteenth centuries were apt to be slaves to Vitruvian precedent, they were not quite so prone to the writing of books as were their contemporaries in England. Of the twelve now under review, only three have been proved definitely guilty of this particular weakness, and of these Anthoine le Pautre's contribution was limited to a folio of his own designs,[182] executed or merely conceived. Blondel

FIG. 13.—DESIGN FOR IRONWORK BY DANIEL MAROT (*Œuvres*. 1712)

edited Savot's *Architecture Française* (1664), became first director of the Academy, and published his lectures as a *Cours d'Architecture* (1672). He also wrote several other volumes on architecture, mathematics, the Calendar, watchmaking, on Pindar and Homer, and—on bomb-throwing! Perrault's scholarly translation of Vitruvius was apparently his first introduction to architecture, and was followed in 1683 by a book on the Orders.

The French architect of the late Renaissance, though

[181] Blomfield, *op. cit.*, pp. 27-8.

[182] A. Le Pautre. (*Œuvres*. 1652)

his status was generally well defined, was a versatile man. He developed the art of town-planning, he sometimes undertook the design of theatrical properties and scenery, and he regarded certain branches of engineering as within his province. Thus J. J. Gabriel designed eight bridges, notably that at Blois. Occasionally the architect seems to have gone beyond the usual professional limits, and " from time to time the architects of Louis XIV undertook contracts on their own account."[183] Architectural competitions are frequently mentioned, models as well as drawings being submitted, either by invitation or in the open field.

A model and a specification (*devis*) formed the usual basis of a Crown contract, with what we should call a " schedule of prices." On completion all work was measured by the King's masons and carpenters, but it does not appear that payment was made on the architect's certificate.[184] The almost incredible amount of building carried out by Louis XIV made a position in his " Office of Works " the goal of every architect's ambition. Hitherto the title of *Architecte du Roi* had possessed no special significance, but under Louis XIV it became a professional plum. Le Vau, as *Premier Architecte du Roi*, in 1669 had a salary of 6,000 francs, and 30 years later the post was worth 11,000 francs (say, £2,000 in present-day purchasing power). Colbert's post at the same date was probably worth about ten times as much. J. H. Mansart was earning some £5,000 a year as Royal architect as early as 1683, and when he became " First Commissioner of Works " in later life his income was fabulous ; so much so that (according to Saint-Simon) the sum of 3,000,000 francs was offered for the succession to his post.[185] According to Sir Reginald Blomfield's calculations, this sum is equivalent to £600,000 in pre-war currency, and, therefore, about £1,000,000 to-day. But even these high salaries were only retaining fees, and most of the State architects of all grades carried on extensive private practice.

Even if one does not take the blackest possible view of J. H. Mansart and his contemporaries, the fact remains that Louis XIV's building department became a vast family party. Of the Gabriels it is said[186] that

" what the architect designed, his brother or his uncle contracted for, and some other relation checked the accounts, and it must have been almost impossible for an outsider to break into the ring-fence of this early Office of Works."

Architecturally the later French Renaissance was a magnificent period, but, in these tales of intrigue, nepotism, pedantry, grovelling toadyism, and criminal extravagance, one can detect the germs of that decay which, before the end of the eighteenth century, brought down the whole crazy fabric in a crash of ruin.

[183] Blomfield, *op. cit.*, I, 115. [184] *Ibid.*, I, 44-9. [185] *Ibid.*, I, 48. [186] *Ibid.*

(*The conclusion of Mr. Briggs' Paper will be published in the* JOURNAL *of* 17 *October*)

Mr. K. A. C. Creswell's Researches into the History of Muhammadan Architecture

BY WILLIAM HARVEY.

MR. CRESWELL has established for himself the reputation of a serious investigator into several aspects of Oriental Architecture and in three of his published works he has taken Muhammadan Architecture as his subject.

In his *A Provisional Bibliography of the Muhammadan Architecture of India* (Bombay: The British India Press, 1922) he gives a short description of the contents of many books that have been written concerning the history, art and preservation of famous Indian buildings. The list is a long one and the items range from the exhaustive and conscientious records of the Archæological Survey of India to fragmentary notes published in technical or even in popular journals. Mr. Creswell's Bibliography is particularly useful since so much that has been written on the subject has been given the ephemeral character of a contribution to a magazine; and such writings, whatever their intrinsic merits, run grave risks of being overlooked through their inaccessibility.

Among many more useful works rescued from oblivion is an anonymous *Guide to Lahore*, 1893. Mr. Creswell describes it as "worthless" but its title, *Welcome, Honoured Guests, this is for you*, has proved irresistible; as well it might!

The Origin of the Plan of the Dome of the Rock, published by the British School of Archæology in Jerusalem at 2, Hinde Street, London, W.1, contains a most interesting comparison between the Cathedral at Bosra and the Kubbat as Sakhra (Dome of the Rock) in regard to the disposition of their plans and the dimensions of their parts. Mr. Creswell traces the resemblances which seem to have existed among four famous buildings in the Near East and suggests that the Plan of the Dome of the Rock is the result of a tradition in geometrical planning of concentric circles and octagons.

In general terms this may safely be conceded, but future discoveries must be awaited before the identity of the central part of the cathedral at Bosra and of the Dome of the Rock can be established. Mr. Creswell's intelligent anticipation should, however, prove a valuable guide to future research.

The line of argument from the known to the unknown is well sustained and the suggested completion of the Bosra plan shown on Fig. 6 has the merit of constructional practicability. One difficulty in the way of analysis of the geometrical basis of ancient buildings in the Near East is the irregularity of setting out discoverable in the actual masonry.

Both Mauss in his *Methode employée par les Architectes Byzantins pour tracer le plan de la Mosquée d'Omar a Jerusalem* and Mr. Creswell in his conjectures concerning the central part of the Cathedral at Bosra proceed as if these very marked deviations from symmetry and from alignment did not exist, or were at least immaterial. Now the irregularities at the Dome of the Rock, as I know from personal measurement, amount in places to differences of a foot or more in features that are nominally equal. The whole arrangement of the central ring of piers and columns bearing the dome is out of alignment with the surrounding walls and colonnades and has been given a twist in an anti-clockwise direction to such an extent as places the great marble shafts beside the axis lines that they might normally be expected to stand upon.

The reasonableness of applying a geometrical setting out pattern to an obviously inaccurate plan might be called in question were it not for the fact that the relationship between the inaccurate plan and the geometrical ideal is obvious when once it has been pointed out. Mauss and Mr. Creswell have been able to see the whole as well as the part.

The Oriental Architects were geometricians at heart and obtained the proportions of their masses from memory of a pattern rather than by setting out that pattern with extreme precision. In measuring the plan of the Dome of the Rock in 1908 I was struck with the fact that the concentric rings were fairly accurate in regard to their distance from their centre while the division of their circumferences was not nearly so correct. It seems probable that having swung the circles with a peg and a piece of string the architects settled the positions of angles of walls and of column bases in the traditional manner by employing porters to pose blocks of stone at the appropriate spots around their circumferences. Once the general effect was about right the building was erected without adherence to minute figured dimensions or to a plan accurately drawn to scale. The Eastern architects knew their geometry and could afford to treat it with the familiarity due to an old friend, whereas we have to treat it with the meticulous attention due to a distinguished stranger. The inaccuracy of the measurements in the Dome of the Rock neither makes nor mars its architecture, but the abundant knowledge that could ignore inessentials does contribute qualities of vigour and refinement to this most exquisite building.

Mr. Creswell is probably quite right in asserting that certain geometrical proportions "are fundamentals in time and space, they go right down to the very basis of our own nature and of the physical universe in which we live and move, and may very well appeal to us subconsciously." That such geometrical proportions should be achieved by a process of adaptation of means to ends, the reuse of old marble shafts and so forth, instead of by pettifogging calculation and rigid accuracy only increases their effectiveness in a great monumental work of art.

It is interesting to read in Mr. Creswell's pages that Hindu architecture, on the contrary, was based not upon surd proportions but upon "simple arithmetical ratios."

To a great many residents and visitors the Citadel of Cairo is but the foundation platform for the domes and minarets of Muḥammad 'Aly's mosque, which figures in so picturesque a fashion in distant views of the city.

A nearer approach often spelt disappointment, for the dust of the barrack-yards, the uninteresting modern buildings, and the tawdry painted alabaster of the mosque interior fail to maintain the romantic interest of the general impression.

In *Archæological Researches at the Citadel of Cairo*, Mr. Creswell has found a way to delve through the dust and rediscover the romance of the great fortress erected by Saladin as a defence against invaders, and particularly against risings of the Egyptians—whose ruling house he had himself deposed.

An introductory chapter acquaints the reader with the history of Saladin's campaign and the conditions which led to the need of a citadel dominating the capital city.

The site, chosen upon an outlying spur of the Muqaṭṭam hills, has been criticised by former writers, but Mr. Creswell defends Saladin's judgment, on the grounds that the missile-throwing weapons of the period were probably ineffective at the distance which separates the citadel from the crest of the cliffs.

The great magnitude of the fortification is not easily recognised on the spot, for the big Egyptian sky and the sun-glare on the dust have a tendency to dwarf mere human creations. Mr. Creswell points out, however, that some of its towers bear comparison, in point of size, with European examples of the period.

The description of the fortifications in detail, with the changes introduced by succeeding builders, makes extremely interesting reading. The author was enabled, by the assistance of the military authorities and the financial support of the Comité de Conservation, to clear away débris in several places, and to discover the nature of the wall galleries and discharging chambers of Saladin's archers.

He was also able to determine that several of the great rusticated circular towers contain within a core of the plain masonry of Saladin's time, and to reveal by extensive excavations the presence of an important gateway which he identifies as the historical Bâb al-Qarâfa, although in its blocked-up form it had been unrecognised under the name of Burg al-Imām.

Here, as elsewhere in the citadel enclosure, succeeding builders had added to Saladin's walls and towers, and the exterior appearance of the gate had been already remodelled before it was found expedient to block it up. The turn of the entrance passage through the gate, and the open pit through which any invader would have to march to attack the door of the fortress, are military devices of great antiquity, which reveal Saladin's grasp of his science.

As in other strongholds in England and elsewhere, Saladin's citadel consisted of an inner and an outer part, and since Mr. Creswell has achieved such interesting results in his examination of the northern portion, it is to be hoped that he will find opportunity to attack the smaller enclosure which adjoined it on the south-east.

In an appendix the Mâchicoulis is discussed, and some early examples of stone-built chambers projecting out on corbels beyond the general wall line are illustrated by line blocks in the text and by photographs on Plate XXVIII. Mâchicoulis on the Cairo Citadel are shown on plates XI, XII, XIV, XVI and XIX. The volume is provided with large folding plans of different portions of the enclosing wall and its towers and with many excellent photographs. The work is a distinct addition to archæology and to the study of military architecture of the past.

The Ancient Monuments Society

BY JOHN SWARBRICK [*F.*], REPORTING ARCHITECT TO THE ANCIENT MONUMENTS SOCIETY.

THE Ancient Monuments Society was founded by a number of architects and other admirers of our ancient buildings, who had for some years been endeavouring in the northern counties of England and in North Wales, with great public spirit, to do what they could to arouse public interest in a number of fine old homes and to preserve them from needless destruction.

They had discovered, incidentally, that existing legislation and sympathetic organisations, although admirable to a point, had great limitations, and that, in the northern counties, a new and active organisation was needed in order that every resource might be tried and no opportunity lost when old buildings of architectural interest might be in danger of demolition.

The objects of the founders were clearly stated in a list that was widely circulated at the time when the Society was formed. A few typical quotations from this list may be of interest :

To promote the study of and arouse interest in ancient monuments, historic buildings, our British national architecture generally, works of art and ancient craftsmanship, by means of lectures, publications, exhibitions and in other ways.

To collect drawings, photographs and other records relating to ancient monuments, historic buildings and craftsmanship.

To encourage the preservation of ancient monuments, works of art, craftsmanship and natural scenery, and also of old gardens, statuary, avenues, lakes and settings generally which enhance the interest of the buildings or other objects.

To advocate and assist in the promotion of legislation for the more adequate protection of all ancient monuments, historic buildings, and ancient craftsmanship worthy of preservation, whether capable of protection by the Ancient Monuments Boards or otherwise.

To advocate the extension of the work of the Royal Commission on Ancient Monuments and historic buildings.

To secure for exhibition purposes accurate scale models of artistic quality to illustrate ancient buildings.

To survey and explore the sites of ancient buildings.

To assist or co-operate with archæological and art societies and other kindred organisations in order to secure the protection of ancient monuments, works of art and craftsmanship worthy of preservation, and to obtain unity of action in all matters of common interest.

To advise and assist in the formation of public museums and other collections to illustrate ancient structural and decorative work and craftsmanship.

To organise and undertake urgent works of reparation to ancient monuments to prevent their collapse or decay. Some of the founders were members of the County Committees appointed by the Ancient Monuments Board of England to advise them regarding the scheduling of ancient buildings worthy of preservation, whilst others were members of the ecclesiastical Committees, appointed to advise the Chancellors of various dioceses regarding applications for faculties to extend or alter churches. The list of important ancient buildings unnecessarily destroyed in the northern counties during the last fifty years would be appalling. Even quite recently numbers of interesting houses have been lost. At the present time, the central portion of Lathom House, near Ormskirk, the last surviving work of Leoni in Lancashire, and, in fact, the last great eighteenth century house in the county, laid out with flanking pavilions and curved corridors, is being demolished. Not unnaturally, Professor Reilly regrets the loss of such a building, belonging, as he states, to the most cultured period of English architecture. Bold Hall, also by Leoni, has already gone. Samlesbury Hall, near Blackburn, was recently sold to a builder for breaking-up purposes, like Standish Hall, which has just perished. Danes House, Burnley, and Worsthorne Hall, admired by W. G. Hamerton, have been demolished. Marton Hall and many other old homes have disappeared. Gwydir Castle, near Llanrwst, is now a roofless ruin, the relic of two destructive fires. Agecroft Hall is in danger, Radcliffe Tower on the point of falling to pieces owing to the need of repair, and Hurleston Hall, near Ormskirk, is in course of demolition. Lydiate Hall is dilapidated, whilst Denton Hall has nearly gone and Harden Hall is in the last stages of decay. Dutton Hall, near Runcorn, has been converted into cottages, and many fine old homes like Chorley Hall, Cheshire, are being used as farmhouses. In many cases, application to inferior uses has been the main cause of their survival. These are but typical cases, yet they indicate what is happening at the present time throughout the length and breadth of the country.

The objects and work of the Ancient Monuments Society were very clearly explained by Dr. T. F. Tout, F.B.A., now Honorary Professor of History at the University of Manchester, in an address which he gave upon that subject in the John Rylands Library, Manchester, on 2 June 1924, when Sir Henry Miers, the Vice-Chancellor of the University, presided. After referring seriatim to the work and powers of all the various agencies in this country for the preservation of ancient monuments, Dr. Tout stated that neither the Church, nor the State, nor any existing organisation possessed adequate powers to enable them to protect all the buildings that should be retained as national monuments. During the winter session lectures were given by Professor A. Hamilton Thompson, Professor of Mediæval History at the University of Leeds ; Sir Frank Baines, C.V.O., C.B.E., the Director of Works ; the Right Hon Lady Constance Hatch and Mr. F. H. Crossley, F.S.A. At these lectures the Earl of Stamford, the Dean of Manchester, and others presided. During the coming winter other addresses are to be given by the Earl of Crawford and Balcarres, K.T., President of the Ancient Monuments Society ; Sir Martin Conway, M.P. ; Mr. J. A. Gotch, past President of the Royal Institute, and others. During Easter, 1925, a joint meeting of the Classical Association and of the Ancient Monuments Society was held at Bangor, when addresses were given by His Grace the Archbishop of Wales and Professor J. E. Lloyd, of Bangor. Members of the Ancient Monuments Society were invited to accompany the Classical Association to Segontium (Carnarvon), whilst members of the Classical Association were able to join the visits of the Ancient Monuments Society to the ancient buildings in the Conway Valley and on the Denbighshire moorlands, in addition to the one to Beaumaris Castle.

The new Society has already been particularly active in many ways. In addition to advising owners and appointing delegates to serve on various committees, it has also been instrumental in forming special local committees for the preservation or exploration of ancient buildings. In this way it has come to be associated with the movements for the preservation of Hough End Hall, Manchester ; the exploration of Cockersand Abbey ; the preservation of Samlesbury Hall, near Blackburn, and others. At the present time its advice is being sought regarding many structures scattered over the northern counties and in North Wales, many of which are of considerable architectural interest. The intervention of the Society in the case of Samlesbury Hall was providential, as a sum has now been subscribed which has made it possible for the building to be purchased for the purpose of preservation from the builders, who had bought it with a view to demolition and had also acquired the entire site on which it stands. Those who would like to obtain further particulars or to become members of the Society should communicate with one of the hon. secretaries : Mr. W. S. Booth, the Grammar School, Blackburn, and Miss M. Deanesly, M.A., the University, Manchester.

Correspondence

CLAY LUMP FOR HOUSE BUILDING.

The Editor, R.I.B.A. JOURNAL,

SIR,—Having recently had occasion to build an additional story over a century-old building constructed of clay lump, I am at a loss to understand why the use of this admirable and cheap substitute for brickwork continues to be neglected.

Some six years ago, when efforts were being made to revive the sound and economic building methods of our forefathers, and much attention was drawn to cob and pisé construction, letters from Mr. C. J. Skipper, Mr. Colin Bateman and others extolling the virtues of clay lump were published in *The Builder*, but they appear to have excited so little interest that public funds continue needlessly to be expended upon the building of dwellings with far more costly and less durable materials.

Clay lump, formerly in general use for the walls of dwellings in certain parts of Norfolk, where it is still occasionally thus employed, possesses for this purpose every virtue of brickwork except its appearance, and, while offering greater protection from heat and cold, it is readily obtainable in any district where the clay and straw of which it is composed are to be found.

The method of making the lumps is as follows, and involves no skilled labour or plant beyond a wooden box 18 in. by 9 in. by 6 in without bottom or top. Ordinary stiff clay is deposited on a piece of level ground, and, while being trodden by a horse, it is brought to the consistency of putty by sprinkling with water, during which process, short lengths of straw or other fibrous material are liberally added to the mixture, which is then moulded into blocks in the box mentioned above, and left to dry.

These blocks can then be laid as masonry by any able-bodied persons of ordinary intelligence, and require no mortar, but are bedded in the wet clay from which they are made and can readily be cut by a saw to any required shape or size.

External walls of this material 9 in. in thickness are amply strong for two-storied dwellings, and, if their outer surfaces are protected from rain they are everlasting.

Clay lump is free from the objections which attend the employment of cob or pisé, both of which excellent materials depend for their stability upon the judgment and skill of those who handle them. They entail, moreover, an extravagant thickness of walls, and take longer in building, which can only proceed during suitable weather; moreover the occupation of cob or pisé buildings has to be postponed for some considerable time after they have been completed.

Those who contemplate the employment of clay lump should be prepared for discouragement from Trades Unions, whose policy is to obstruct building operations by unfettered labour, and from authorities opposed to all but late Victorian methods of construction. They may, however, rest assured that, should they succeed in overcoming such opposition, their buildings will be sheltering families in comfort generations after the steel and iron houses now in course of construction have found unlamented repose upon the scrap heap.—Yours, etc.,

JAMES RANSOME [*F.*]

REORGANISATION OF THE WORK OF THE COUNCIL AND COMMITTEES OF THE R.I.B.A.

During the period that has elapsed since the end of the war the regular work of the R.I.B.A. has increased very greatly in amount and in scope. The new Charter and Bye-laws have largely increased the size of the Council, and its membership is drawn, to a much larger extent than before the war, from outside the London area. The Council now numbers 67 members in place of 42, and of these about 45 per cent. have to make a special journey to London to attend meetings. Attendance at fortnightly Council meetings involves a heavy call on the time of non-London members

It is felt that the existing machinery for carrying on the work of the R.I.B.A. is becoming overstrained. The old method under which a Council, consisting mainly of architects living in the London area, met once a fortnight and was the sole executive authority is becoming unworkable under the new conditions. The Council forms a narrow funnel through which all matters involving executive decisions, however trifling, must necessarily pass. The time of the Council is much occupied with small matters of routine and detail, and it is difficult to find time for the full discussion of really important matters of policy and principle which vitally affect the future of architecture. The time appears to have come for finding a means of simplifying the work of the Council and endeavouring to save the time of its members by eliminating all unnecessary work and allowing the Council greater time to concentrate on the more important questions of general policy.

With this object in view it has been decided that in future the Council shall meet once a month during the Session, and that the Selection and General Purposes Committee shall be reconstituted with enlarged powers as an Executive Committee consisting of

The President,
The Hon. Secretary,
The Chairmen of the four Standing Committees,
The Chairman of the Board of Architectural Education,
The Chairman of the Finance and House Committee,
The Chairman of the Allied Societies' Conference,
The Chairman of the Registration Committee, and
Two non-London Members of the Council.

The Executive Committee will meet at least fortnightly from the beginning of October to the end of July. It will receive on behalf of the Council the reports of all Committees, except those of the Board of Architectural Education, deal with any matters in these reports that call for immediate action, and lay before the Council with or without comment the reports received from Committees. It will have executive power to deal summarily with all matters of routine not affecting general policy or finance and all business requiring urgent attention before the next meeting of the Council, and will report to the Council for ratification any action taken since the last Council meeting.

The Board of Architectural Education will be enlarged and made more widely representative, and will meet four times a year, and the large number of existing Committees of the Board will be reconstituted as three Committees—Schools, Examinations, and Prizes and Scholarships—

with executive powers to deal with all routine matters, but making recommendations to the Board on all matters of principle or policy.

Members of the Council will retain their present power of bringing any matter directly before the Council by giving notice to the Secretary.

The Executive Committee has been constituted forthwith as follows :—

The President.
The Hon. Secretary.
The Chairman of the Art Standing Committee.
The Chairman of the Literature Standing Committee.
The Chairman of the Practice Standing Committee.
The Chairman of the Science Standing Committee.
The Chairman of the Finance and House Committee.
The Chairman of the Board of Architectural Education.
The Chairman of the Allied Societies' Conference.
Mr. H. T. Buckland (Birmingham).
Mr. Francis Jones (Manchester).

THE R.I.B.A. NEW CLASS OF SUBSCRIBERS.

In the Supplemental Charter recently granted to the R.I.B.A., provision is made for the formation of a non-corporate class of Subscribers. The Council have the power to elect to this new class any persons who, not being professional architects, are interested in the activities of the Royal Institute and in architectural matters generally.

" Subscribers " will be entitled to use the Loan and Reference Library, to attend all General Meetings (except private Business Meetings) and to receive a copy of the Annual Report. They will not, however, be entitled to use in connection with their name or business any words or initials indicating that they are Members of or connected with the Royal Institute.

The annual contribution payable by a " Subscriber " will be £1 1s. The first payment will become due within two months of election and subsequent payments on the first of January each year. Subject to the additional payment of 12s. per annum, Subscribers will also receive post free the R.I.B.A. JOURNAL, which is published fortnightly during the Session (November to June) and monthly during the recess.

The Council cordially invite applications from ladies or gentlemen who desire to be thus associated with the work of the Royal Institute, and the necessary nomination form can be obtained on application to the undersigned.

IAN MACALISTER,
Secretary R.I.B.A.

THE 1926 EDITION OF *WHO'S WHO IN ARCHITECTURE.*

The editor of *Who's Who in Architecture* wishes to remind those architects who have not yet completed the Questionnaire sent to them in May last that the form should be filled in and returned to him without delay, as a new edition of the publication is on the point of going to press.

CITY OF LONDON COLLEGE.

COURSES OF LECTURES ON TIMBER.

A two years' evening course on timber has been arranged under the supervision of the College Timber Trade Advisory Committee, which has received the formal approval of the Timber Trades Association.

The first lecture of the first course (consisting of 20 lectures) commences on 2 October, and will be continued on the following Fridays from 6.30 to 7.30, followed by practical work from 7.30 to 8.30. This course will be devoted to expositions on the identification and uses of common timbers (lecturer, Mr. E. H. B. Boulton, M.C., M.A.), and visits to Kew Botanical Gardens will be arranged in connection with the lectures. Under Section 11—Seasoning, Preservation and Defects—four lectures will be delivered on Fridays, commencing on 5 March, 1926; and commencing on 6 April, Mr. J. C. W. Shears will deliver four lectures on Mensuration. (A visit to the docks will be arranged with this section.) In the second year's courses the general subjects will be treated as follows : Identification and uses of special timbers—Forests of the world and the timber supply—Timber trade documents, and Botany.

Intending students should see Mr. S. J. Duly or Mr. E. H. B. Boulton on Wednesday or Thursday evenings, 23 or 24 September, between 6 and 7.30 p.m. The fee is 30s. for each year.

NATIONAL HEALTH INSURANCE.

The Architects' and Surveyors' Approved Society,
26 Buckingham Gate, London, S.W.1.
28 *July* 1925.

The Editor, JOURNAL R.I.B.A.

DEAR SIR,—On the receipt from the Ministry of Health of the very satisfactory report on the valuation of this society's assets, the Committee of Management framed a new scheme of " Additional Benefits," which was adopted at a general meeting held at the Surveyors' Institution on the 24th instant.

The scheme, which is retrospective from the 6th instant, comprises the following additional benefits over and above those specified in the National Health Insurance Act :—

Sickness benefit increased by 7s. to a maximum of 22s. per week.

Disablement benefit increased by 3s. 6d. to a maximum of 11s. per week.

Maternity benefit increased by 14s. to a maximum of 54s.

The following amounts were also earmarked for grants to members, requiring the undermentioned benefits :—

Dental treatment	£1,650
Members in distress	£250
Convalescent treatment	£1,000
Treatment in hospitals and nursing homes	£750
Provision of surgical appliances	£250
Optical treatment and provision of glasses	£1,000
Provision of nurses during serious illness	£270

As the rate of contributions has not been increased, the scope of the benefits which this society is now able to offer is well worth the consideration of all those in the architectural, surveying or allied professions who come within the scope of National Health Insurance.—I am, sir, yours faithfully,

HERBERT M. ADAMSON,
Secretary.

Obituary

MR. ALBERT HOWELL [*F.*]

Albert Howell died alone in his rooms on 27 August last—at the age of 65. He was a son of Mr. Albert Parkinson Howell, surveyor to the Parish of St. James, Westminster, and grandson of Mr. James Howell of Vincent Square, who was surveyor to the City of Westminster for many years. Albert Howell was articled to Mr. Hamilton Clarke, of Serjeant's Inn. He then worked for some time in the private drawing office of Mr. Robert R. Arntz, who had succeeded Mr. James Howell in the position of surveyor to the City of Westminster.

After a year or two spent at Leeds in an architect's office, he returned to London and accepted a post as temporary draughtsman in the office of the surveyor to the Metropolitan Police. He was put upon the permanent staff, and remained in the service until he retired in 1922, after 40 years' service. It fell to him to design the various buildings for the Metropolitan Police, and he effected a very great improvement in the design of these many buildings. The station in Hyde Park is among the best of those he designed. He was a reserved, sensitive, retiring man, who made few friends, and was not widely known among architects. He was an ingenious and resourceful designer, a very good draughtsman, and a capable man of business. Possibly his nature prevented him from cultivating friendship among artists. I believe he knew very few, but I think he would have found kindred spirits among that company. His chief hobbies were chess and billiards—these games gave opportunity for the exercise of his considerable powers of ingenuity and resource, and he played both brilliantly. CHARLES SPOONER [*F.*]

STEPHEN ERNEST SMITH [*F.*]

Mr. Smith died on 11 April in his 80th year. He was elected an Associate of the R.I.B.A. in 1867, and a Fellow in 1881. He was articled to Mr. William Hill, of Leeds, and after further training under Mr. Somers Clarke and Mr. Douglass Matthews, he commenced practice in Leeds in 1868, a practice which he continued for fifty years, his partner for half that period being Mr. John Tweedale [*F.*] one of his old pupils. Among the buildings which Mr. Smith designed were the Imperial Insurance Building, the York City and County Bank, the Yorkshire County Cricket Pavilion, the Agricultural Department of Leeds University, the March Institute, the Grand Arcade and Adel Towers, all in Leeds and the neighbourhood.

WREN'S CHURCHES.

Mr. R. Langton Cole [*F.*] draws attention to the fact that owing to the removal of the corner building, a good photograph of All Hallows Church and Tower, Lombard Street, can easily be obtained across Gracechurch Street: also that the tower and spire of St. Magnus, London Bridge, can be studied in every stage from Adelaide House, and that permission can be obtained from Sir John Burnet and Co.

BOARD OF ARCHITECTURAL EDUCATION.

Exhibition of Designs of Students exempted from the R.I.B.A. Intermediate and Final Examinations.

The designs by students exempted from the R.I.B.A. Final Examination (with the exception of the subject of professional practice) will be on exhibition from Wednesday, 16 September, to Saturday, 26 September inclusive, from 10 a.m. to 5 p.m. daily in the Galleries of the Royal Institute of British Architects, 9, Conduit Street, W.1.

The R.I.B.A. Board of Architectural Education Silver Medal for recognised schools is awarded for the best set of designs submitted in the exhibition of designs of students exempted from the R.I.B.A. Final Examination.

This year the following schools, which have courses of five or more years' duration recognised by the Royal Institute for the purpose of exemption from the Final Examination, have sent exhibits :—

The Architectural Association, Bedford Square, W.C.1.
The London University School of Architecture, University College, Gower Street, W.C.1.
Robert Gordon's Colleges, Aberdeen.
Glasgow School of Architecture, 167, Renfrew Street, Glasgow.
School of Architecture, University of Liverpool.
Department of Architecture, McGill University, Montreal, Canada.

The following Schools of Architecture recognised by the R.I.B.A. for the purpose of exemption from the Intermediate Examination have sent exhibits :—

The Architectural Association, Bedford Square, W.C.1.
London University School of Architecture, University College, Gower Street, London, W.C.1.
Robert Gordon's Colleges, Aberdeen.
Birmingham School of Architecture, Margaret Street, Birmingham.
Cambridge University School of Architecture, 1, Scroope Terrace, Cambridge.
The Technical College, Cardiff.
Edinburgh College of Art, Lauriston Place, Edinburgh.
Glasgow School of Architecture, 167, Renfrew Street, Glasgow.
Leeds School of Art, Vernon Street, Leeds.
School of Architecture, University of Liverpool, Liverpool.
School of Architecture, the Victoria University, Manchester.
Department of Architecture, Surveying and Building, the Northern Polytechnic, Holloway, N.
Department of Architecture, McGill University, Montreal, Canada.
Bombay School of Art, Bombay.

R.I.B.A. EXAMINATIONS.

May and July 1925.

The questions set at the Intermediate and Final (or Special) Examinations held in May and July 1925 have been published and are on sale at the Royal Institute, price 1s. 6d. (exclusive of postage).

Notices

ELECTION OF MEMBERS.

Associates who are eligible and desirous of transferring to the Fellowship class are reminded that, if they wish to take advantage of the first election in the coming session, they should send the necessary nomination forms to the Secretary, R.I.B.A., not later than 3 October.

LICENTIATES AND THE FELLOWSHIP.

The attention of Licentiates is called to the provisions of Section IV, clause 4 (6) and (cii) of the Supplemental Charter of 1925. Licentiates who are eligible and desirous of transferring to the Fellowship can obtain full particulars on application to the Secretary, R.I.B.A., stating the clause under which they propose to apply for nomination.

R.I.B.A. TELEPHONE NUMBERS.

Members are requested to note that the R.I.B.A. Telephone Exchange lines are now "Mayfair," 434 and 435. The use of the line number "Mayfair, 6543" has been discontinued.

BOARD OF ARCHITECTURAL EDUCATION. R.I.B.A. STATUTORY EXAMINATIONS.

The R.I.B.A. Statutory Examinations for the offices of District Surveyor under the London Building Acts, or Building Surveyor under local authorities, will be held at the R.I.B.A., London, on 21, 22 and 23 October, 1925.

Applications for admission to the examinations, accompanied by the fee of £3 3s. must be received at the R.I.B.A. not later than Saturday 3 October, 1925.

Full particulars of the examinations and application forms can be obtained from the Secretary, R.I.B.A.

REGISTER OF ARCHITECTS WILLING TO TAKE RECOGNISED SCHOOLS STUDENTS IN THEIR OFFICES.

On the recommendation of the Board of Architectural Education, the Council have decided to establish at the office of the R.I.B.A. two registers :

(1) a register of advanced students of recognised schools.
(2) a register of the names of architects willing to take such students.

The intention is in this way to assist advanced students up to the stage of the completion of their qualifications for exemption from the Final Examination ; one of the qualifications for exemption from the Final Examination being twelve months' experience in an office during the fourth and fifth years of the school course.

The Council hope that general use will be made of the registers, and that as many Architects as possible will place their names upon the register.

R.I.B.A. PROBATIONERS.

Since December 1924 the following have been registered as Probationers of the Royal Institute :—

Adams : John Stanley, "Hill View," Victoria Road, Woodbridge, Suffolk.
Akeroyd : George Francis Edward, 9 Turner Avenue, Lidget Green, Bradford, Yorks.
Allen : Alfred Maxwell, "Nortons," Lingfield, Surrey.
Allwood : Graham Charles Milnes, Oak Cottage, Chigwell, Essex.
Alsop : George Hatherley, Australia House, Strand, W.C.
Archibald : Richard Maxwell, 25a Albert Terrace, Middlesbrough.
Ashford : Tolson Murray, 30 Fountain Road, Edgbaston, Birmingham.
Aspinall : Charles Edmund, 2 Kirkstall Avenue, Marton, Blackpool.
Bacon : Clarence, 18 Deepdale Street, Sutton-in-Ashfield, Notts.
Banks : Arthur Vivian, 7 Bassalleg Road, Newport, Mon.
Barnes : Ronald Whitfield, 10 Winston Gardens, Knock, Belfast.
Barnett : Michael, 39 Russell Square, Brighton, Sussex.
Bartlett : Cyril John, 26 Lewes Street, Canton, Cardiff.
Barton : Herbert Leslie, 14 Devonshire Road, Princes Park, Liverpool.
Barton : Thomas William, "Wayside," Seaford, Sussex.
Bedford : David Edwin Wyatt, St. Andrew's Rectory, Holborn, E.C.4.
Berrill : Cecil Richard, 9 Meredith Road, Clacton-on-Sea, Essex.
Binda : Henry Hector Charles, 55 Flaxman Terrace, Tavistock Square, W.C.1.
Bingham : Walter Ronald, 46 Auckland Avenue, Cottingham Road, Hull.
Blythin : Charles Frederick, 69 Rymer Road, East Croydon, Surrey.
Bond : Clifford, 24 Spring Bank Road, Chesterfield, Derbyshire.
Bond : Gerald Hollingsworth, 115 Gower Street, W.C.1.
Bowen : Harman Aaron, "Madeley," Eversley Road, Sketty, Swansea.
Bowen : Percy, 97 Alma Street, Newport, Mon.
Boys : Thomas Joseph, 30 Portman Road, Boscombe, Bournemouth.
Britton : Edward, Gladstone Street, Soundwell, Staple Hill, near Bristol.
Broad : John William, 66 Fielding Lane, Oswaldtwistle, near Accrington.
Brookfield : George Piers, c/o Royal Bank of Canada, Paris, France.
Bubb : Edward Cavendish, Waverley Hotel, Burrell Road, Ipswich.
Bullivant : Lindsay Frank, 460 Stratford Road, Sparkhill, Birmingham.
Bushell : William George, 11 Glebe Road, Gravesend, Kent.
Bytham-Wilson : Allan John, 12 Manor Gardens, Richmond, Surrey.
Caldwell : Ian, c/o Messrs. J. F. Curwen and Son, Highgate, Kendal.
Caldwell : John Arne MacCowan, 21 Suffolk Street, Pall Mall East, S.W.1.
Calton : Jack Norman, 121 Mount Pleasant Road, Hastings.
Carr : Terence, 19 Church Street, South Lambeth, S.W.8.
Castle : James Thomas, 26High Street, Roehampton, S.W.15.
Chatwin : Walter Vincent, 30 Lansdown Crescent, Cheltenham.
Clark : Arthur Ronald, 8 Ranby, near Retford, Notts.
Clark : James Charles, 258 Great Western Road, Aberdeen.
Coleman : Frederick Randolph Doughty, "Glen Lynn," St. Saviours Road, Bath.
Craig : Archibald, 13 Murieston Crescent, Edinburgh.
Creak : Horace Leopold, 52 West View, Terrace, Caversham, Reading, Berks.
Culpin : Clifford Ewart, 27a Bush Lane, E.C.4.
Cupper : Sydney Henry, 7 Albany Road, Stroud Green, N.4.
Deas : Thomas Victor, Vicarsford, Airdrie, Scotland.

De Metz : Morris, 34 Upper Berkeley Street, W.1.
Dickinson : Sidney Naylor, Station House, West Jesmond, Newcastle-on-Tyne.
Dixie : Frederick Harker, " Montrose," 105 Lowther Road, Bournemouth.
Dobson : William Vivian, 26 Bayley Street, Newcastle-on-Tyne.
Donnithorne : Alfred Alexander Bunster, 54 Hillfield Avenue, Hornsey, N.8.
Dower : John Gordon, " Willowdene," Ilkley, Yorkshire.
Eele : Reginald John, 7 Eldon Street, Reading, Berks.
Ellis : Basil Wilson, c/o Henry A. Ellis, Esq., M.A., 40 Castle Street, Swansea.
Fairey : William George, Mill Street, Newlands, Cape Province, S.A.
Farnsworth : John Edward, " Holmhurst," Gateford Road, Worksop.
Fisher : Richard Alwyne, 2 Pryme Street, Hull, East Yorks.
Folkard : Benjamin Stanley, 32 Bentinck Street, Runcorn, Cheshire.
Ford : George, 65A Highbury Hill, N.5.
Foster : George, 6 Clifford Road, Stanley, Co. Durham.
Fowler : William Roy, 260 Manchester Road, Burnley, Lancs.
Fowles : Alec John, " Daisy Croft," Rayleigh Road, Thundersley, Southend-on-Sea.
Fox : Cyril Richard, 72 Windmill Road, Hampton Hill, Middlesex.
Gillett : Herbert Gornall, " Gable End," Stanmore Road, Harrow Weald, Middlesex.
Glashan : William, 173 Holburn Street, Aberdeen.
Glover : Norman, 58 Winchester Street, Sherwood, Nottingham.
Gosling : James Kenneth, 16 Fore Street, Torpoint, Cornwall.
Gough-Cooper : Walter Henry, " St. Petroc," Coalville, Leicester.
Gould : Harold James, " The Manse," Pier Avenue, Clacton-on-Sea.
Graham : Kevin, 3 Sandes Avenue, Kendal, Westmorland.
Green : Arthur Ronald, 22 Station Street, Spalding, Lincs.
Green : George Dymoke, " Dursley," St. Albans, Herts.
Greenidge : John Theodore Waterman, Chesham House, Kettering, Northants.
Greenstreet : John Alfred, 99 Ramuz Drive, Westcliff-on-Sea, Essex.
Greenwood : Jack, " Winnefield," Victoria Road, Cleveleys, Lancs.
Greig : Jessie Marjorie, " Highlands," Lampton, near Hounslow, Middlesex.
Harland : Adele Mary, " Beech Terrace," Holmfirth, near Huddersfield.
Harris : William Ernest, High Street, Burnham, Bucks.
Harrison : Edward James, 29 St. Mary's Parade, Castle Hill, Lancaster.
Harrison : Gerald Henry, 98 Osnaburgh Street, Regent's Park, N.W.1.
Harrison : Ronald Kitching, 19 Front Street, Quebec, Co. Durham.
Hartland : Eric John, 5 Queen's Road, Hartshill, Stoke-on-Trent.
Hartley : Frank, 49 Leeds Road, Lofthouse, Wakefield.
Hartley : James Stanley, 111 Lichfield Grove, Church End, Finchley, N.3.
Hey : John Ayrton, 54 Barrowford Road, Colne, Lancs.
Hildesley : Trevor, 104 Hornsey Lane, Crouch End, N.6.
Hinton : Robert Charles Hamilton, 60 Burford Gardens, Palmers Green, N.13.
Hirst : William, 24 Davenport Road, Durban, Natal, South Africa.
Hives : Eric George Vinan, " Ruardean," 20 Northumberland Avenue, Reading.
Hoare : Eric Lester Treadaway, 35 Hollywood Road, South Kensington, S.W.
Hobbs : Athol Joseph, 2 Gledhow Gardens, South Kensington, S.W.
Hodson : Arthur Bergholt, 40 Park Avenue, Wood Green, N.22.
Holloway : Henry James, 8 Clarence Avenue, Queens Park, Northampton.
Honeywell : Frederick William, 17 Balaclava Road, Roath, Cardiff.
Hope : Arthur Fentern, " Canterton," Hatch End, Middlesex.
Hughes : George Humphrey, 38 Africa Gardens, Cardiff.
Hulse : Robert England, " Glenmore House," Droitwich, Worcs.
Hunt : Henry Arthur, 26 Sedlescombe Road, Fulham, S.W.6.
Ingoldsby : Joseph, " Newby," Bachelors Lane, Dee Banks, Chester.
Jackson : Edgar Harry, 130 Oxford Street, Stoke-on-Trent, Staffs.
Jewell : Arthur Edward, 261 Syr David's Avenue, Canton, Cardiff.
Jones : David Archebald, Arfryn House, Gurnos, Lower Cwmtwrch, Swansea.
Jones : Emrys Maldwyn, Maesygarth, St. Seiriol's Road, Llandudno.
King : John Gould, 70A St. George's Road, S.W.1.
Kirkpatrick : Geoffrey, Mount Pleasant, Brenchley, Paddock Wood, Kent.
Lardy : Edward Adair, 34 West End Park Street, Glasgow.
Lawrence : Eric George, 46 Regent Road, Great Yarmouth.
Lawrie : Robert Sorley, 12 Claremont Street, Aberdeen.
Lawton : Eric Arthur, 90 Laburnham Avenue, Garden Village, Hull.
Leach : Cyril Austin, 27 Fitzroy Street, Fitzroy Square, W.1.
Lewis : Doris Adeney, 41B Belsize Park, N.W.3.
Lewis : Ernest Wamsley, 104 Regent's Park Road, N.W.1.
Ley : Arthur Harris, Montague House, Sidcup, Kent.
Lindsey : Lance Stephen, 47 Longmarket Street, Pietermaritzburg, Natal, S.A.
Lipson : Samuel, c/o Jas. Miller, Esq., A.R.S.A., 15 Blythswood Square, Glasgow.
Lloyd : David Edgar, Salutation Hotel, Bute Street, Cardiff.
Lomas : Leslie Clarson, 15 Morven Grove, Southport.
Lord : Wilfrid Turner, 18 Park Hill, Ealing, W.5.
Louw : Hendrik Jacobus, 18 Clifton Gardens, Maida Vale, W.9.
Lowry : Wilfred Laurence, 218 Portland Street, Southport, Lancs.
Luckham : Frank John, c/o L. F. Vanstone, Esq., 15 Old Town Street, Plymouth.
Lyons : Edward Douglas, 40 Henderson Road, Forest Gate, E.7.
McDonald : Donald Calvert, 203 North Ridge Road, Durban, Natal, South Africa.
MacDonald : Eric Alexander Hector, 38 Claremont Square, N.1.
Macfayden : Irene Joanna, 9 Bury Street, Chelsea, S.W.3.
Marriott : Eric Charles, 8 Albion Terrace, Albion Square, Dalston, E.8.
Marston : Frank, 11A Worbeck Road, Anerley, S.E.20.
Martin : Francis Charles, 23 Kildare Street, Dublin, Ireland.
Mawer : Eric Douglas, 134 Victoria Avenue, Hull.
Maycock : Silvanus Perren, 55, Thurlestone Road, West Norwood, S.E.27.
Meikle : Edyth, 27 Parliament Hill, Hampstead, N.W.3.
Mence : Stanley Richard George, 16 Cumberland Road, Acton, W.3.

MILLMAN : JOHN ROBERT HAROLD, 10 Cranbourne Avenue, Salisbury Road, Plymouth.
MITCHELL : GEORGE ERIC, " Brookside," West Villas, Stockton-on-Tees.
MITCHELL : LEONARD PERCIVAL, 36 Mirabel Road, Fulham, S.W.6.
MITCHELL : THOMAS, 62 Dalhousie Road, Barnhill, Broughty Ferry.
MOFFITT : JOHN, 54 Grey Street, Newcastle-on-Tyne.
MOORE : GORDON, 13 Glen Terrace, Chester-le-Street, Co. Durham.
MORGAN : FREDERICK WILLIAM, " Mexico," Lon Masarn, Ty-Coch, Sketty, Swansea.
MORGAN : JOHN LORING, c/o Edward Loveluck, Esq., Bridgend, Glamorgan.
MORRISON, : ROBERT HORN, 8 Union Terrace, Aberdeen.
MUNGEAM : REGINALD HERBERT, " Oakdene," Stoneleigh Drive, Worcester Park, Surrey.
NICHOLLS : GUY HERBERT, " Hillmarton," Wills Grove, Mill Hill, N.W.7.
NICHOLLS : HERBERT EDWARD, " Calleron," Upper Cimla Road, Neath, Glam.
OAKLEY : WILLIAM OWEN, Penygenlan, Berriew, Montgomeryshire.
OATLEY : JAMES WILLIAM, 166 Upper Richmond Road, Putney, S.W.
PALMER : WALTER H., " Hazelhead," Old Clee Road, Cleethorpes.
PARKER : CECIL JAMES, 105 Noel Street, Nottingham.
PATERSON : HAMISH NOBLE, " Tigh-an-Uillt," Inverness, Scotland.
PEAT : JOHN TREVOR WILLIAMS, " Glancennan," Gnoll Park Road, Neath.
PENN : COLIN TROUGHTON, 75 Abbey Road, Warley, Birmingham.
PERCIK : WOOLF, 7 East Tenter Street, E.1.
PESTER : GEORGE SAMUEL, Beehive, 122 Meeting House Lane, Peckham, S.E.15.
PETTIT : HENRY EDWARD, 35 Taylor's Lane, Sydenham, S.E.26.
POPE : WILLIAM HENRY THOMAS, Station House, Chilham, near Canterbury, Kent.
POPE : WILLIAM ROBERT, c/o 26th Field Co. R.E., Bordon, Hants.
POTTER : JOHN EDWARD, " The Gables," Bath Road, Kettering.
POWER : ALBERT GEOFFREY, 40 Lady Margaret Road, N.W.5.
PRESTON : FREDERICK LESLIE, 190 Clive Road, Dulwich, S.E.21.
PRICE : GEOFFREY LANGFORD, The Quarry, Fairwater, near Cardiff.
PRICE : OLWEN MARGUERITE EMMERSON, " Maesteg House," Whitchurch, Cardiff.
PRINCE : ERIC, West Cottage, Parker Street, Derby.
PUGH : LESLIE, " Sandycroft," Ness, Neston, near Birkenhead.
PYMAN : NOEL, Holly Lodge, St. James Park, Harrogate.
RALLING : STAFFORD THOMAS LISLE, 6 Devonshire Place, Exeter.
REDMAN : EDGAR, Hanmer Place, Bowerham, Lancaster.
RILEY : HAROLD, 27 Winston Road, Blackburn, Lancs.
ROBINS, STANLEY EDWARD, 19 Little Heath Road, Coventry.
ROSCOE : FRANK, JNR., " Brownlea," Berkhamstead, Herts.
ROSENFELD : JACK, 43 Fitz Neal Street, Shepherds Bush, W.12.
ROSS : JOHN, 20 St. Mary's Street, St. Andrews, Fife.
ROTHWELL : ROLF HOLROYD, Albion Place, Bury, Lancs.
SALT : GEORGE EDWARD, 26 Nevill Street, Southport, Lancs.
SAUNDERS : WILLIAM, 24 Castle Gate, Newark-on-Trent.
SHARP : WILLIAM ALEC, 24 Haymaker Lane, Oakworth, near Keighley, Yorks.
SHERWIN : ROBERT WHITE, 8 Beechcroft Avenue, Stafford.
SILLITO : JOHN ANSON, " Lynn," Victoria Road, Tunstall, Staffs.
SIMMS : ALFRED ERNEST HATHER, " Hargate House," West Bromwich.
SINCLAIR : ALBERT GRAHAM, 27 Lonsdale Terrace, West Jesmond, Newcastle-on-Tyne.
SMITH : ARTHUR WILKINSON, " Lee Mount," 35 Raw Nook Road, Salendine Nook, Huddersfield.
SMITHSON : GEORGE HUGH, 3 Winstonian Road, Cheltenham.
SPACKMAN : ARTHUR JAMES, " Mayfield," Bath Road, Swindon, Wilts.
STANWORTH : RICHARD, " Rosegarth," James Avenue, Marton, Blackpool, Lancs.
STEPHENSON : JOHN, Ash Cottage, Beech Grove, Whickham, Co. Durham.
SUDDABY : WILLIAM DRIVER, 39 West Mount, Armley, Leeds.
SYKES : CHARLES, 11 Upper Price Street, York.
TAYLOR : HAROLD EDWIN, 112 Marlborough Flats, Chelsea, S.W.3.
THOMPSON : BENJAMIN HAROLD, Burderop, near Swindon, Wilts.
TITE : BASIL FREDERICK, Waterloo House, Witney, Oxon.
TOCHER : WILLIAM, c/o J. C. Procter, Esq., 62 Woodhouse Lane, Leeds.
TROWER : FRANK, 18 Archibald Road, Worthing, Sussex.
TRUSTAM : WALTER JAMES, 8 Malvern Avenue, Ella Street, Hull.
TURNER : JOHN WESTLEY, 69 Radstock Road, Reading.
TYRRELL : RICHARD HENRY, 30 Eastfield Road, Peterborough.
WAINE : ANDERSON, 2 Wesley Terrace, Barnard Castle, Co. Durham.
WALDEN : RONALD PHILIP, " Rotherfield," Rotherfield Road, Henley-on-Thames.
WALKER : RAYMOND, 12 Moor Park Mount, Headingley, Leeds.
WARD : ALBERT SCHOLFIELD, 25 King Street, Blackpool.
WARD : GORDON WILLATT, 76 Trentham Road, Penkhull, Stoke-on-Trent.
WARD : LESLIE BURNETT, Craigside, Monton Green, Eccles, Manchester.
WATSON : WILLIAM IRVING, " Cunningarth," Wigton, Cumberland.
WATT : JOHN, Education Office, East Church Street, Buckie, Banffshire.
WHITAKER : LEONARD, " Burnholme," Montreal Avenue, Chapeltown, Leeds.
WHITE : PATRICK MICHAEL, 86 Cavendish Road, Harringay, N.4.
WHITFIELD : CYRIL THOMAS, Orford Hall, Orford, near Warrington.
WILBOND : FRANCIS STANLEY, 92 Chesterfield Road, St. Andrews Park, Bristol.
WILDING : HENRY GEORGE, 10 Devon Terrace, Mumbles, Swansea, South Wales.
WILLIAMS : DAVID JOHN, 34 Gynor Place, Ynyshir, Rhondda, Glam.
WILLIAMS : EDWIN HERBERT HORSLEY, 136 Lewisham Road, S.E.13.
WILLIS : ARTHUR WILLIAM, " Endlestone," 87 Kingsfield Road, Watford, Herts.
WITHERS : KENNETH GEORGE, 50 Cannon Street, E.C.4.
WOOD : JOHN WILLIAM, 34 Bedford Square, W.C.1.
WOOD : LESLIE JOHN WILLIAM, 114 Arthur Street, Derby.
WREN : LAWRENCE, Police Station, Low Row, Carlisle.
WRIDE : JAMES BARRINGTON, 1 Grove Place, Whitchurch, Cardiff.
WRIGHT : EDNA BRACKSTONE, 34 Westminster Avenue, East Park, Kingston-upon-Hull.
WRIGHT : MAURICE CHRISTOPHER, 5 North Square, Hampstead, N.W.1.
WYLDE : JOHN HASLAM, 1 Church Avenue, Gee-Cross, Hyde, Cheshire.

Competitions

LEAGUE OF NATIONS.

Competition for the Selection of a Plan with a View to the Construction of a Conference Hall for the League of Nations at Geneva.

The League of Nations will shortly hold a competition for the selection of a plan with a view to the construction of a Conference Hall at Geneva. The competition will be open to architects who are nationals of States Members of the League of Nations.

An International Jury consisting of well-known architects will examine the plans submitted and decide their order of merit.

A sum of 100,000 Swiss francs will be placed at the disposal of the Jury to be divided among the architects submitting the best plans.

A programme of the competition when ready will be despatched from Geneva, and Governments and competitors will receive their copies at the same time. Copies for distant countries will be despatched first.

The British Government will receive a certain number of free copies. These will be deposited at the Royal Institute of British Architects, and application should be made to the Secretary, R.I.B.A., 9, Conduit Street, W.1, by intending competitors.

Single copies can be procured direct from The Secretary-General of the League of Nations at Geneva, for the sum of 20 Swiss francs, payable in advance, but will not be forwarded until after the Government copies have been despatched.

On the nomination of the President of the Royal Institute, Sir John Burnet, A.R.A., has been appointed as the British representative on the Jury of assessors.

THE NEW INSTITUTE FOR THE BLIND, BUENOS AIRES, ARGENTINE REPUBLIC.

An International Competition has been promoted for the Argentine Institution for the Blind, Buenos Aires, Argentine Republic.

A small number of copies of the Conditions have been deposited in the R.I.B.A. Library for the information of British Architects who may desire to compete.

A booklet containing the full text of the conditions with other information (translated from the Spanish) and a plan of the ground on which the Institution is to be erected is available for inspection at the Department of Overseas Trade (Room 42), 35 Old Queen Street, London, S.W.1.

PROPOSED FIRE AND POLICE STATION, NEWCASTLE-UPON-TYNE.

Premiums £500, £300 and £100 respectively are offered. Assessor Mr. Percy S. Worthington, F.R.I.B.A. Conditions may be obtained by depositing £2 2s. Designs to be sent in not later than 8 October 1925. Apply A. M. Oliver, Town Clerk, Town Hall, Newcastle-upon-Tyne.

PROPOSED NEW COLLEGE BUILDINGS, LIVERPOOL COLLEGE.

Proposed New College Buildings to be erected on a site in Queen's Drive, Mossley Hill, Liverpool. Assessor, Sir Giles Gilbert Scott, R.A. Premiums £500, £300 and £200 are offered. Last day for questions, 30 September 1925. Conditions may be obtained by depositing £2 2s. Designs to be sent in not later than 1 January, 1926.

AUSTRALIAN WAR MEMORIAL—CANBERRA.

Competitive designs are invited for the Australian War Memorial at Canberra.

The competition is open to architects of Australian birth, wherever located, and in order that competitors who are abroad may be placed on the same footing as those in Australia, the conditions governing the competition will not be available in Australia until 15 August, at which date they will be available at the office of the High Commissioner, Australia House, Strand.

To ensure that the same working time is allowed to all competitors, the competition will close simultaneously in Australia and London on 31 March, 1926, up to noon, on which date designs from architects in Europe will be received at the office of the High Commissioner in London.

Intending competitors should communicate with the Official Secretary to the Commonwealth of Australia, Australia House, Strand, W.C.2.

COMPETITION FOR THE ENLARGEMENT OF CARNEGIE HALL, DINGWALL, AND THE FLEETWOOD HOSPITAL COMPETITION.

Members of the Royal Institute of British Architects must not take part in the above competitions because the conditions are not in accordance with the published regulations of the Royal Institute for Architectural Competitions.

COVENTRY AND WARWICKSHIRE HOSPITAL. PROPOSED NEW WARD BLOCK.

The promoters of the above competition having decided to revise the conditions in accordance with the R.I.B.A. Regulations, the President has appointed Mr. C. E. Bateman, F.R.I.B.A. as assessor.

PROPOSED PARISH HALL, BRAUNTON.

Members of the Royal Institute of British Architects must not take part in the above competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

TOPSHAM PUBLIC HALL COMPETITION.

Members of the Royal Institute of British Architects must not take part in the above competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

The promoters of the above competition have decided to amend the conditions in accordance with the R.I.B.A. regulations and have asked the President to appoint an Assessor.

Members' Column

MESSRS. CHORLEY, GRIBBON AND FOGGITT.

Mr. G. H. Foggitt, A.R.I.B.A., A.R.C.A., formerly of 84 Albion Street, Leeds, has entered into partnership with Messrs. Chorley and Gribbon, F. and A.R.I.B.A., of 3 Park Place, Leeds, at which address their practice will in future be carried on under the style of Chorley, Gribbon and Foggitt.

CHANGE OF ADDRESS.

Messrs. Norris and Shattock, of 51 High Street, Guildford, and 16 Church Street, Godalming, having recently moved from their London Office, at 26 Buckingham Gate, to 14 Victoria Street, London, S.W.1.

Mr. J. H. Somaké has changed his address from 284 Cricklewood Lane, N.W.2, to 245 Willesden Lane, N.W.2.

Mr. H. T. Jackson [*A.*] has changed his address from 53 Whitworth Road, S.E.25, to c/o City Engineer's Office, Council House, Coventry.

Mr. H. Oliver, L.R.I.B.A., has changed his address to 9 Staple Inn, Holborn Bars, W.C. His telephone number is now Central 3780.

APPOINTMENT VACANT.

Architectural Assistant wanted for the Middle East—must have passed the R.I.B.A. Final Examination. Knowledge of quantities useful. Must be unmarried and about 25 years of age. Salary £30 per month first year and £35 per month second year. Contract, two years; two months' leave on full pay. Second class fares out and home on completion of contract. Cost of living—£12 to £15 per month in pensions. Apply to the Secretary R.I.B.A., stating full qualifications.

APPOINTMENTS WANTED.

Architectural Assistant desires post, general domestic housing, estate development. Moderate salary.—Apply Box 4491, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.1.

Structural Assistant, Student R.I.B.A., A.M.I.Struct.E., anxious to obtain similar position for further experience; very keen.—Apply Box 2491, c/o Secretary R.I.B.A., 9 Conduit Street, W.1.

Associate, experienced quantity surveyor, would like to hear from architects who could utilise his services.—Apply Box 5225, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.1.

Architect's Assistant wants temporary employment in or near London. Plans, details, levelling, etc. Salary per arrangement.—Apply Box 8023, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.1.

A.R.I.B.A., P.A.S.I., on the architectural staff of a Home County, desires improved position in public service. Very wide experience, including that in county buildings generally and housing schemes. Salary required £400.—Apply Box 966, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.1.

Architect's Assistant, A.R.I.B.A., desires engagement in London or the Home Provinces. Experienced in the preparation of working drawings and details. Good designer in the Renaissance or Georgian styles of architecture. Keen worker. Excellent testimonials.—Apply Box 4030, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.1.

Architect'sAssistant, age 26, required further experience in the drawing office of a London architect who has good work on hand. Salary, four guineas per week.—Apply to P., 27 Causton Street, Westminster, S.W.1.

A.R.I.B.A., own office in Kent, offers occasional assistance to Members practising in Kent, Sussex and Surrey—sketch plans, working drawings, details, specifications, typing, tracings; reliable work, very moderate terms. Temporary assistance if desired. Reply Box 7925, c/o The Secretary, R.I.B.A., 9 Conduit Street, London, W.1.

Architect wishes to meet a Firm of Architects with a view to managing a Branch Business in a small Country Town.—Reply Box 7995, c/o The Secretary, R.I.B.A., 9 Conduit Street, W.1.

A.R.I.B.A. (36) desires responsible position in South of England (Bournemouth district preferred) with view to partnership. Experienced in all branches; steady and energetic.—Reply Box 636, c/o The Secretary, R.I.B.A., 9 Conduit Street, W.1.

Architect (R.I.B.A. qualification), having to relinquish responsible Staff appointment with Large Industrial Concern owing to severe trade depression, desires an engagement where Factory and Industrial Constructional work is principally dealt with. Thoroughly capable in all branches of Design; 20 years' varied experience, chiefly in Design and Construction of Industrial Buildings, Structural Steel and Reinforced Concrete work or would join Architect requiring assistance as Working or Salaried Partner.—Reply Box 200, c/o The Secretary, R.I.B.A., 9 Conduit Street, W.1.

OFFICE ACCOMMODATION.

Mr. William W. Wood, A.R.I.B.A., of 102 Great Russell Street, W.C.1, would be glad to share his large, airy, well-furnished and well-lit office. Rent, including heating, lighting, cleaning, and use of telephone, £65 per annum.

Architect (F.R.I.B.A.) has spare rooms, either one, two or three to let in his office, W.C. distict. Mutual working facilities could be arranged.—Apply Box 2702, c/o The Secretary R.I.B.A., 9 Conduit Street, London, W.1.

Architect (F.R.I.B.A.) wishes to let off part of his offices in West Central District. Inclusive rent: £60 per annum.—Reply Box 4925, c/o The Secretary, R.I.B.A., 9 Conduit Street, W.1.

PARTNERSHIP WANTED.

A.R.I.B.A., with use of West-End office and phone, which would remain available, desires partnership in well-established practice in or near London. Trained in recognised Architectural School and has had wide office experience in London and the provinces. Would invest capital if prospects were sufficiently good. Testimonials.—Box 2925, c/o The Secretary, R.I.B.A., 9 Conduit Street, London, W.1.

MR. A. J. BUTCHER.

Mr. A. J. Butcher (A.) has opened an office at 2 Premier Parade, Edgware, Middlesex. (Telephone, Edgware 208.)

MESSRS. SYMINGTON & PRINCE.

Messrs. H. A. Symington, A.R.I.B.A., and W. J. Prince, L.R.I.B.A., lately practising under the title of Messrs. H. H. Thomson & Co., will in future practise under the title of Messrs. Symington & Prince at No. 8 Market Street, Leicester.

A.B.S. SCHEME OF PROFESSIONAL INSURANCE.

Insurance to-day is a very complicated business and too much care cannot be exercised in the choice of an insurance company and of a policy. If, however, architects consult the Insurance Committee of the Architects' Benevolent Society, they are sure of obtaining competent guidance in all insurance matters. Especially favourable terms are secured by the Society, and every insurance negotiated through its agency results in a direct contribution to the Benevolent Fund. Enquiries should be addressed to the Secretary, A.B.S., 9 Conduit Street, W.

Members sending remittances by postal order for subscriptions or Institute publications are warned of the necessity of complying with Post Office Regulations with regard to this method of payment. Postal orders should be made payable to the Secretary R.I.B.A., and crossed.

Arrangements have been made for the supply of the R.I.B.A. Journal (post free) to members of the Allied Societies who are not members of the R.I.B.A. at a specially reduced subscription of 12*s.* a year. Those who wish to take advantage of this arrangement are requested to send their names to the Secretary of the R.I.B.A., 9 Conduit Street, W.1.

LOAN LIBRARY CATALOGUE.

A new catalogue, brought up to date, of the Loan Library has recently been compiled, and can be now obtained on application at the R.I.B.A., price 1s. 6d., postage 3d. extra.

FIG. 1.—AEOLIAN HALL. Walter Cave, Architect

Designing for Musical Tone

BY HOPE BAGENAL [*A.*]

THE small concert room used for chamber music should be specially designed for musical tone. In the small concert room compared to the large defects are more obvious and the nice instrument of the soloist is more open to criticism. Also a greater variety of tone quality occurs in the chamber music hall. It is possible to have in it violin, harpsichord, flute, voice, piano solo, and a chamber orchestra on the same platform in a week. And the tone requirements of these are all different.

A soloist when he praises a hall refers usually to one of three factors :—

1. A sense of ease and " power " in producing tone and therefore absence of fatigue.

2. The enhancing of the character of his own voice or instrument, for instance the " richness " of a bass voice, the " emotional variety " of a violin, the " purity " of the flute.

3. Ease of phrasing and balance between tone production in the upper and lower register, for instance whether a violinist can work with the weight of the bow alone ; whether the pianist has to subdue his bass or his treble, or on the other hand can play with freedom.

It is well known that the tone quality of musical instruments depends on the series of partials or overtones possessed by each instrument. Every instrument consists of a *generator* (such as the strings of a violin or reed of a clarinet) which produces tone, and a *resonator* (such as the violin body and the tube of the clarinet) which reproduces it and at the same time amplifies and modifies it. It amplifies by spreading the vibrations over a wider area, for instance over the whole sound board of a piano, and modifies by selecting some partials above others in the resonating process.* The nature of the sympathetic vibrations between generator and resonator, and the nature of that selecting process determines the quality of any tone. But we now know that all the materials used in the construction, fitting and furnishing of a room will absorb selectively, that is to say will absorb some tones

* To realise the difference due to the resonator we have only to compare, in the clarinet, the buzz caused by the reed alone with the sound of the instrument itself.

of a musical series more than others. Therefore when we take a musical instrument from out-of-door conditions and introduce it into a room we are adding to it a second " resonator " which will, in turn, modify tone. This is perfectly recognised by organ builders who have to design an organ differently for every hall or church, and who have to take into account the relative amounts of masonry, wood, or glass present.*

Since, then, the room must be inevitably a resonator of some kind we must make it as valuable as possible. Tone can be amplified by developing the wood floor of the platform which should have an enclosed air space beneath it of about 6 inches. The difference between a small upright and a grand piano (among other factors) is the difference in size of the resonator or sound board, and such a difference can easily be made by the architect in the design of a concert room. If the resonator formed by the orchestra floor can be continued up the walls of the proscenium or platform recess in the shape of panelling jointed to the floor, then size and efficiency will be increased. Panelling, orchestra floor and platform front can be made one continuous resonator if contact is preserved at the edges and if the air space behind the wood communicates. Such a resonator is shown in Fig. 2. Since resonating surfaces propagate sound in a direction normal to their surface wood panelling carried up the walls is specially useful. All wood panelling is more efficient if in contact with platform floor, and this point should be remembered in design. The increased power secured in this way is specially valuable for 'cellos and double basses—instruments in any orchestra generally in need of strengthening.

Also, since a resonator cannot help modifying tone as well as amplifying it we should first get good general tone conditions suitable for average musical requirements. Tone conditions depend first upon reverberation, and since reverberation varies inversely with the absorbing power and since the audience absorbs 80 per cent. to 90 per cent. of the whole it follows that the seating is a direct factor. The tendency in England is to increase galleries and to add extra seats in as small a cube as possible. But the concert room should not be packed like a theatre. A proportion should exist between the volume and the absorption—roughly 40 to 50 cubic feet for every absorption unit. In music rooms a proportion of this kind is more important than any other.† It is interesting that the Odeion at Termessos, a Greek concert room for chamber music holding 600 persons, gives, upon analysis, the right proportion.* Other halls such as the Kilbourn Hall in America, the Aeolian Hall, London (Fig. 1), Uppingham School music room, King's Hall, Armstrong College, Newcastle, acknowledged to be good for tone, have either by chance or design achieved a proportion of this kind. The Kilbourn Hall, in America, was very carefully designed for chamber music requirements.

When we come to consider varying tone conditions for different instruments the problem is difficult but by no means impossible.

We have from the musicians themselves a series of terms describing their reactions to the building as an instrument; tone is described as " easily produced," as " full," " bright," " soft," " rich," " hard," " thin," " dead," " dull," as " true value," as " forced," and so on. In a series of tests carried out with the permission and active help of the Building Research Board, in their temporary laboratory at Harlesden, an attempt was made to test the result on tone of a series of common materials with direct reference to the satisfaction of the players and singers. The different materials were introduced into the chamber as required. A tenor voice, bass, violin, piano, 'cello and viola were present. For the sake of clearness musicians were asked to note their impressions as follows:—

1. Reverberation—too long or too short, or suitable. Possibility of good phrasing?
2. Tone—full, bright, rich, soft?
3. Tone—hard, thin, dead, dull?
4. Loudness—sense of power, body of tone?
5. Reinforcement of notes—even or uneven?
6. Conditions. Which hall do results resemble?

This scheme was not rigidly adhered to but musicians were asked to distinguish these points separately and endeavour to note them.

Various common building and lining materials were then introduced into the room in order to provide different tone conditions. Each singer and player had one special song or piece of music for all tests and also sang or played as he or she felt inclined.

The first obvious result was that a minimum reverberation was required for all instruments, namely, about 2 seconds. (The volume of the test chamber was 95,000 cubic feet.) The conditions pronounced the best by Mr. Eugene Goossens gave a reverberation (C_4) as much as 2·6 seconds. Perhaps the sense of power given by this length of reverberation influenced opinion. These conditions were compared to the Kilbourn Hall, in America, a concert room pronounced excellent for chamber music by Mr. Goossens. The Kilbourn Hall has reverberation 2·2 seconds, for one-third audience (170 people). The sense of power

* In an organ each note has its own separate resonator—the pipe—and each pipe for every stop must be tuned in its place in the room because the room modifies its tone. The amount of glass present in any auditory is important in organ design because powerful low notes are transmitted through glass and are not reflected as high notes are reflected.

† See Watson's *Acoustics of Buildings*, p. 30, for an excellent analysis of this proportion in a number of concert rooms acknowledged to be good for tone.

* See *A.A. Journal*, Vol. XLI, July, 1925, p. 40.

varying with reverberation was appreciated by all the instruments and applied specially to the piano.

Scarcely less important was the variety of materials necessary to secure a balance of tone between treble and bass. The elements contributing to the absorption for the set of conditions pronounced the most generally satisfactory were :—1. Thick felt pads. 2. Curtains of thin felt hanging loose. 3. Wood near the source of sound. These were in the proportion, roughly, of 100, 150 and 200 square feet. These factors in combination with the audience of five, and the brick and plaster walls, were found to give a certain uniformity of reverberation over a number of octaves. This uniformity went with good phrasing and ease of playing, especially in the case of the violin and piano. When materials showing marked variation between absorption in treble and bass were introduced alone into the chamber phrasing was difficult and sustained playing was more fatiguing.

Without labouring these results it is possible to apply them generally to the design of concert rooms. From the Sabine curves we know that thin felt curtains hung loose absorb relatively in the upper register,* that thick felt and cushions absorb relatively in the middle register, and wood relatively in the low register. By combining these in a concert room an approximate uniformity of reverberation over the whole scale can be had, which, as we have seen, is practically desirable. In designing it should be borne in mind that the common absorption figure given for materials, for employment in Sabine's formula, is for C_4, that is, for the middle register only, and is therefore only a fraction of the data required for true tone design. In the table given below materials are classified and their coefficients given in three positions of the scale. It is noticeable that musical auditories universally approved, like the Gewandhaus, Leipzig, and Covent Garden Opera House, have in addition to the audience factor a considerable area of wood and of drapery.

TABLE OF COEFFICIENTS COMPARED FOR THREE POSITIONS IN THE SCALE.

Material	C_2	C_4	C_6
(Suitable for absorbing in the upper register.)			
Felt curtains ½ inch thick (Sabine) ..	0·04	0·17	0·52
Sabine plaster (B.R.B.)	0·15	0·21	0·27
Akoustolith tile (Guastavino catalogue)	0·05	0·36	0·52
(Suitable for absorbing in the middle register.)			
Felt 1 inch thick with air space behind (B.R.B.)	0·21	0·39	0·32
Carpet on felt under-mat (B.R.B.) ..	0·26	0·32	0·27
Hair cushions per square foot (Sabine)	0·28	0·54	0·53
(Suitable for absorbing in the lower register.)			
Slag wool 1½ inch (B.R.B.)	0·81	0·58	0·29
Wood ⅝ inch pine (Sabine)	0·10	0·13	0·08
Three-ply teak (B.R.B.)	0·19	0·15	0·14

* But thin materials stretched tight immediately become resonant and absorb in other parts of the scale also.

The aim of the architect, then, should be to get a right relationship in his hall between the volume, the area of wood and the area of the softer absorbents. In rooms for chamber music it is not enough to control reverberation by audience alone or to give the bare volume necessary to provide an adequate reverberation.

Now, it is well known that the bass voice, the piano, and instruments possessing powerful overtones will be " sweetened " by a relatively larger amount of absorbing material and therefore a relatively shorter reverberation. For this reason a soloist bass is generally found to prefer the Steinway with its shorter reverberation to the Wigmore Hall. On the other hand, instruments " pure " in tone, that is to say, in which the fundamental is predominant, such as the flute, the soprano voice, the viola* and the " smooth tone " of the horn will benefit by the general reinforcing due to a long reverberation, and derive a sense of power and " depth " of tone from it without undue " harshness." For this reason we find that the harpist and the flutist generally prefer the Wigmore Hall with its longer reverberation to the Steinway.

It is suggested that the problem of meeting the variations in tone character of different solo instruments can be solved along the following lines. Provide a due amount of permanent wood panelling and design adjustable curtains and areas of thick felt. Wood acts in a much more complex way than merely to absorb predominantly in the lower register ; it also reinforces and selects over the whole range in a way that is not yet fully analysed. Its presence is generally desirable in any concert room. Panels of unequal thickness will increase the range of effectiveness. Plaster on wood or metal lath is also resonant and selective, and the plaster walls and ceilings of concert rooms are far preferable on lath than straight on the brick or concrete. The designing of adjustable curtains for absorbing in the upper register is important. They should be made to draw out of tall chases or cupboards and extend round the platform or along proscenium walls. The thick felt for absorbing in the middle register should be designed in panels down the long sides of the hall and should have either a series of broad shutters, sash hung, to lift up and cover them, or else a species of " Venetian " blind or swell shutter over them. With these adjustables a short tuning up of the hall by the soloist himself would be necessary. If a flutist should carry a golden flute† into a hall of this kind he would require no curtain area, since the flute

* In the tests for tone at the B.R.B. laboratory the viola was found to prefer a longer reverberation and to be more articulate under it than any other instrument tested.

† " Elaborate analysis of the tones from flutes of wood, glass, silver and gold prove that the tone from the gold flute is mellower and richer, having a longer and louder series of partials than flutes of other materials."—Miller's *Science of Musical Sounds*.

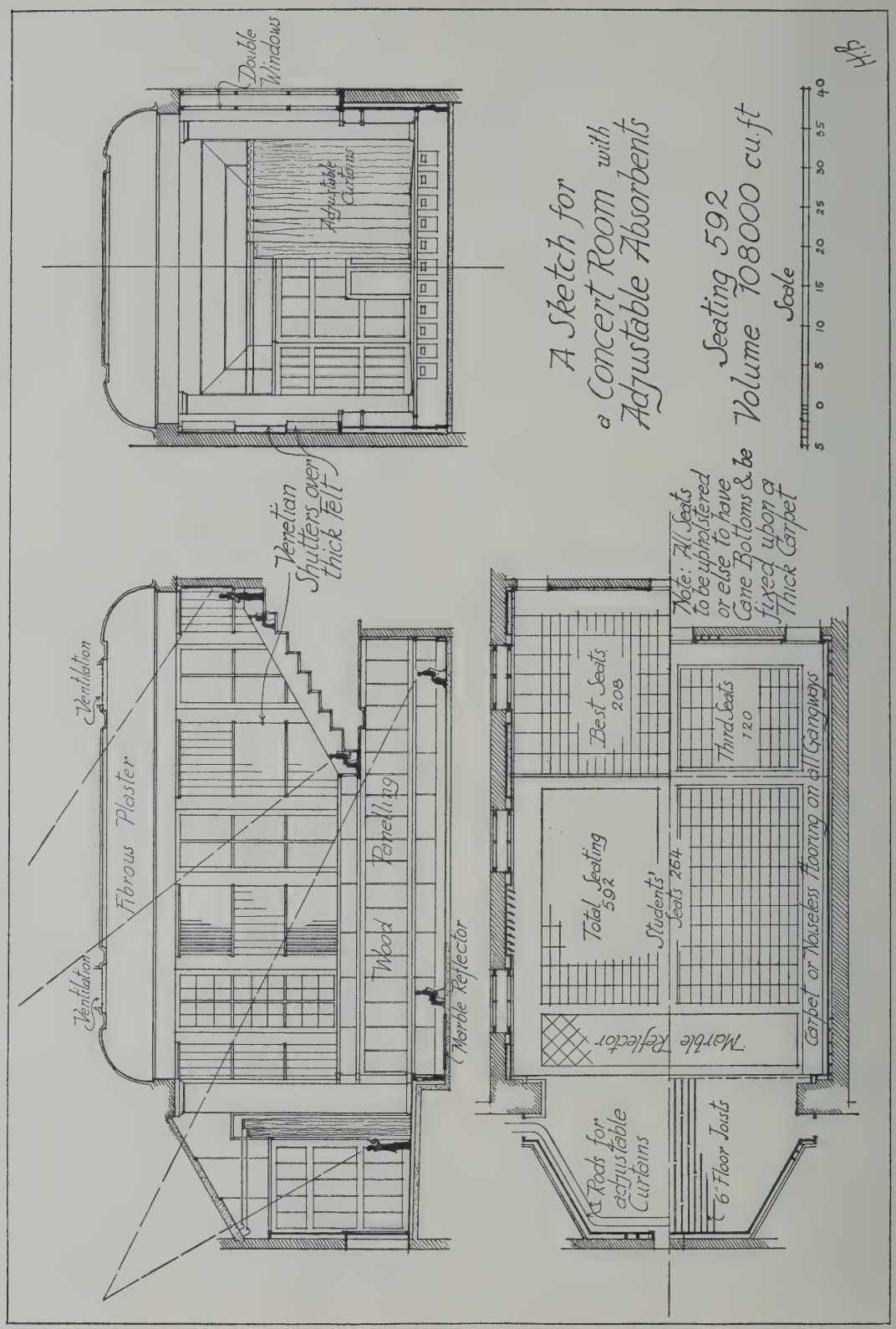

A Sketch for a Concert Room with Adjustable Absorbents
Seating 592
Volume 108000 cu.ft
Scale
5 0 5 10 15 20 25 30 35 40
H.P.
Double Windows
Adjustable Curtains
Venetian Shutters over thick felt
Ventilation
Fibrous Plaster
Ventilation
Wood Panelling
Marble Reflector
Note: All Seats to be upholstered or else to have Cane Bottoms & be fixed upon a Thick Carpet
Best Seats 208
Third Seats 120
Total Seating 592
Students' Seats 264
Marble Reflector
Carpet or Noiseless flooring on all Gangways
Rods for adjustable Curtains
6" Floor Joists

Fig. 2

tone, even when rich, is decidedly pure and can stand a long reverberation. But since, when a flute is blown *forte*, the first partial or octave is liable to appear, he might well direct that some of the thick felt, absorbing in the middle register, be uncovered on one or both sides of the hall. A powerful bass voice, from the nature of his overtones, would probably require felt panels but not curtains, a soprano curtains but not felt panels. A hall tunable in this way would be equally useful for instruments whose character is an extreme flexibility and variation of tone, such as violin and 'cello, who are subject to moods. For these a " correction " in the hall after the first item on the programme might make an important psychological as well as acoustic difference to the player even if not immediately to be detected by the audience. For all cases the adjustments that could be made in such a hall to compensate for variations in the size of audience and therefore in length of reverberation would be valuable.

Fig. 2 is a sketch design for a hall of this kind seating 592 persons. It embodies only the bare necessities from a musical point of view. The adjustable curtains for absorbing in the upper register are placed in two recesses behind the proscenium, to be drawn out and round when required. Panels of felt 2 inches thick are placed on the side walls between windows and covered with " Venetian " shutters having louvers 6 feet by 1 foot and pivoted in a vertical position. These louvers would require to be opened and shut by mechanical means from below, according to the taste of particular performers. The platform, with stage front at one end and the panelling at the other, is made into one continuous resonator in order to amplify the sound. The air space behind these three is made continuous and the wood panelling at the sides of the hall connects up with the platform floor. A marble or tile reflector is placed in the floor immediately in front of the platform. This has the effect of setting back front seats 9 feet from the platform, and seats are graded according to their true value from a musical point of view. " Best seats " are placed in the gallery, where there is always the best assemblage of sounds upon the ear. The second seats are placed in the body of the hall nearest the platform and are called " students' seats," so that persons anxious to study fingering and action may be the nearest to the performers. Third seats are placed under the gallery, where, however, there will be a sufficient loudness owing to the angle of the overhead splay above the platform. Double windows in heavy iron frames are provided. The ventilation grilles are placed in the ceiling, where reflection of sound is not required.

The Architect in History; his Training, Status and Work

Part III

BY MARTIN S. BRIGGS [*F.*]

(*Continued from page* 613)

VII. THE RENAISSANCE IN ENGLAND.

The student of architectural biography of this period is confronted with an enormous mass of material, much of which is admirable in quality and profoundly interesting. Mr. Beresford Chancellor's *Lives of the British Architects*[187] summarises very capably the chief biographies, and monographs in the form of books or articles[188] deal with individual architects. Nevertheless, in spite of painstaking research on the part of some of our best scholars, we know less of English architects prior to the time of Inigo Jones than of their contemporaries in France and Italy. Thus we have no definite knowledge of the designers of Hampton Court, first under Wolsey and then under Henry VIII, though elaborate records and accounts of the works have been preserved.[189] It seems possible that the chief credit may be due to " Mr. Henry Williams, priest, surveyor of the works," as payments for the building were made in his presence monthly.[190] Italian craftsmen were employed largely during the sixteenth century in England, but their work seems to have been confined entirely to decorative details, and it does not appear likely that any of them merited the title of " architect " as generally accepted. But the influence of the Italian Renaissance is clearly manifested in a book by John Shute which was first published in 1563 and had an important effect on the trend of design in this country. (It is curious that only five copies of this book are known to exist, and that none of them is preserved in the British Museum, the best being in the R.I.B.A. Library.) The full title is :—

" The First & Chief Groundes of Architecture used in all the auncient and famous monymentes: with a farther and more ample discouse uppon the same, than hitherto hath been set out by any other. Published by Jhon Shute, Paynter and Archytecte. Imprinted at London in Fletestrete near to Sainct Dunstans churche by Thomas Marshe, 1563."

The opening chapter is headed " The discourse from time, to time hovve this science of Architecture increased." It begins with " the fludde of Noe," discusses the buildings of the Egyptians, Greeks, Etruscans, and Romans; and on the third page outlines :—" What the office and Ductie is of him that vvyll be a Perfecte Architecte or Mayster of buyldings," and then quotes or paraphrases Vitruvius on this at some length. The writer concludes that Vitruvius—

" nameth himselfe to be an Architect, wherein he thinketh him selfe parfait, But I the setter forth of this treatise in English, acknolage myself not to be a parfaict Architecte, (as he saith) nor yet Gramarian, and though I have put myself in prease, it is not through the depe knowlaige aboue rehersed, but I do it for to put in use an entraunce or beginning to them which be therein Ignoraunt, and desyre further Knowledge in these things, as hereafter appereth by the declaracion hereof."

The rest of the book is taken up by plates of the Orders, explanatory letterpress, and some account of antique temples and their intercolumniation. Shute has made extensive use of Serlio as well as of Vitruvius, and mentions the former in the colophon with which his " smal trauailes " conclude. It appears fairly certain that the author studied in Italy from 1550 for some time, but not, as sometimes stated,[191] that his book was reprinted twice after 1563.

Next comes the problematical personality of that John Thorpe whose famous book of Drawings, preserved in the Soane Museum,[192] has given rise to so much speculation and controversy in recent years. It is a small folio of 280 pages, and contains plans and elevations of a large number of houses built between *c.* 1570 and *c.* 1600. Some of these are drawn to scale; others are merely rough sketches; some illustrate buildings which he is believed to have designed; others represent even more certainly work for which he was not directly responsible. We do not even know how many of the pages were actually drawn by his own hand, still less can we be sure that any of them are plans of his own buildings. Mr. Gotch thinks that he drew most of them personally,[193] but Sir Reginald Blomfield doubts this and, moreover, is of opinion that they are probably only surveys drawn after completion of the buildings rather than working plans drawn in advance.[194]

All that we know otherwise of John Thorpe is that he was employed at Ampthill (a royal house), as surveyor; that a writer in the *Gentleman's Magazine* of 1612 describes him as " an excellent geometrician and surveior "; that in 1600 he was " one of the clerks of Her Majesty's works ";[195] that in the same year he visited Paris, where he either built or surveyed a house in the " Faber St. Jarmin " for Marie de Medicis and another house for " Monsieur Jammet "; and that his son John followed in his professional footsteps. Sir Reginald Blomfield observes that " it is not even certain that he was an architect at all." At all events his status is tantalisingly obscure, and one would gratefully welcome further light on his remarkable book of drawings.

Of the remaining names of so-called " architects " during the reigns of Elizabeth and James I, only two or three can be accepted. The epitaph of Robert Smithson, who died in 1614, describes him as " gent, architect, and

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[187] Published 1909. [188] See Bibliography at end of this Essay.
[189] Ernest Law, *History of Hampton Court* (1924), p. 28.
[190] *Ibid.*, p. 106.
[191] W. J. Loftie, *Inigo Jones and Wren* (1893), p. 93.
[192] Bought by Sir John Soane in 1810.
[193] Gotch, *Early Renaissance Architecture in England* (1901), p. 226.
[194] Blomfield, *Short History of Renaissance Architecture in England* (1900), pp. 33-8.
[195] Letter from Sir H. Nevill, dated 16th May, 1600, in the Salisbury Papers.

surveyor unto the most worthy house of Wollaton with divers others of great account," which may mean either that he was the " resident architect " at Wollaton, or that he did in fact design and build the house. He is also described as the " free master mason " of the works at Longleat.[196] Thus, though we now meet with the term " architect," we cannot be sure that any great change in his status has taken place since the Middle Ages. Huntingdon Smithson (d. 1648), son of the last, is said " to have been sent to Italy by his patron in order to gather

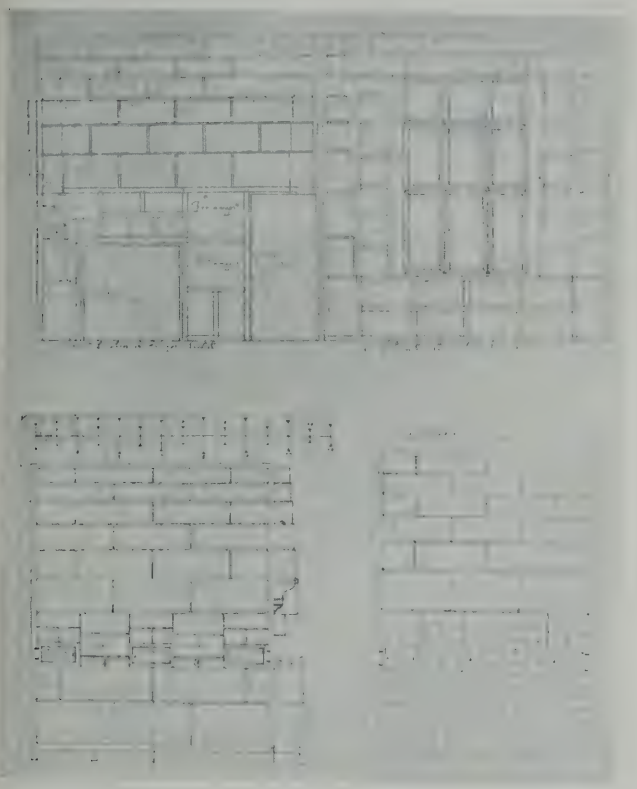

FIG. 14.—DETAIL DRAWING OF A PANELLED ROOM WITH BOOKCASES
From the Smithson Collection (early 17th century)

materials and designs,"[197] and his work at Bolsover certainly shows an extensive knowledge of German detail also. But the Smithsons are chiefly noteworthy for the book of their drawings that has survived, in the possession of Col. Coke of Brookhill Hall.[198] The authorship of these is very doubtful ; it appears that not only had both Robert and Huntingdon a hand in it, but also older and younger members of this " architectural family." Of Ralph (or Rudolph) Simons (or Symons or Symonds) Sir Reginald Blomfield thinks that he designed as well as

[196] Blomfield, *op. cit.*, p. 39.
[197] Chancellor, *Lives of the British Architects* (1909), p. 46.
[198] See papers in the R.I.B.A. JOURNAL by Gotch (1908), and Adams (1907).

built much of the work at Cambridge that is commonly ascribed to him, between *c.* 1584–1605.[199] Three plans and three elevations, signed by him and by one Wigge, are preserved at St. John's College. He departed from

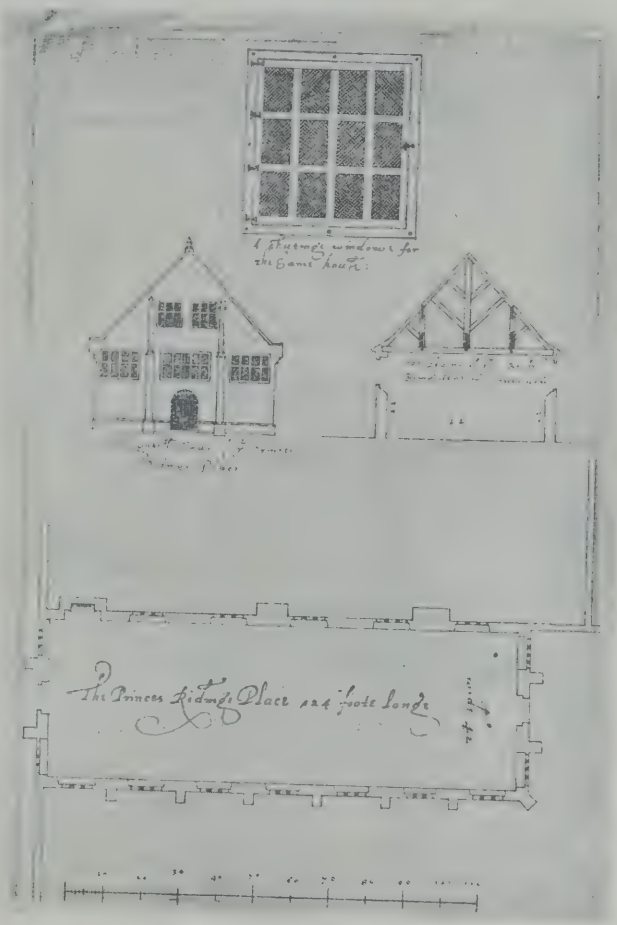

FIG. 15.—PLAN, ELEVATION AND SECTION (ORIGINAL SCALE 24 FT. TO 1 INCH) OF A RIDING SCHOOL
From the Smithson Collection (early 17th century)

Cambridge rather suddenly in 1605, owing to a dispute over some building accounts, leaving Wigge (? his partner) to face the music and eventually to spend some years in gaol.[200]

The seventeenth century in England is so occupied by the gigantic figures of Inigo Jones and Christopher Wren that hardly any other architects, save that pathetic figure John Webb, find a place even as " supers " on the stage. In this brief survey only the salient facts of their careers can be noticed ; their lives and works have been exhaustively treated elsewhere,[201] and here it is possible only to fit them into their positions in our story.

[199] Blomfield, *op. cit.*, p. 42. [200] *Ibid.*, p. 42.
[201] See Bibliography at end of this Essay.

Inigo Jones (1573–1652) was the son of a Smithfield clothworker, whose chief claim to fame lies in having been fined for using bad language to a lady. A slender tradition relates that he was apprenticed to a joiner in St. Paul's Churchyard; more reliable evidence confirms the fact of his first visit to Italy for the purpose of study, either at the expense of a "noble patron," or simply by the generosity of his loose-tongued but apparently prosperous father. He appears to have stayed in Italy for some years, and then to have done some work in Denmark for Christian IV, though the tradition that he designed some of the great palaces there is insufficiently supported by evidence. He must have been a man of fairly good education, otherwise he could never have "held his own, as he did,

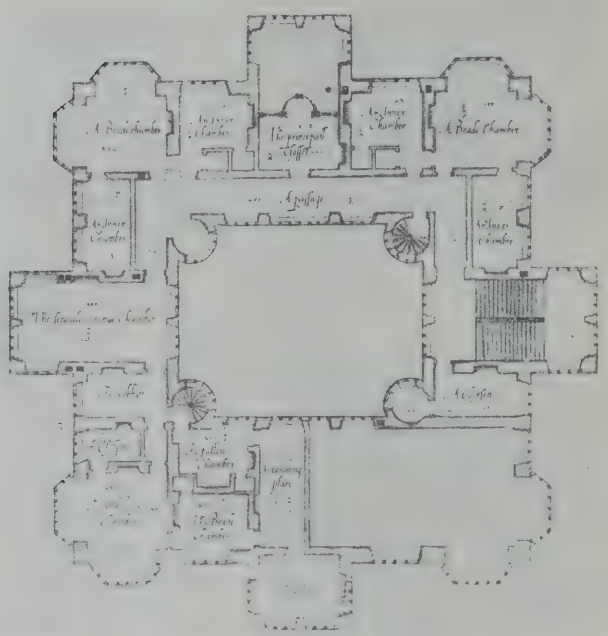

FIG. 16.—FIRST FLOOR PLAN (ORIGINAL SCALE 12 ft. to 1 in.) OF A LARGE HOUSE
From the Smithson Collection (early 17th century)

in the pedantic court of James I";[202] and Webb states that he was "a great geometrician." From 1604 to 1613 he was chiefly employed in designing masques and pageants, features of contemporary life that loom very large in records. From 1613 to 1615 he was again in Italy, studying buildings in Vicenza and Rome, and buying "antiques." Between 1610 and 1612 he acted as Surveyor to the Prince of Wales at a salary of 3s. a day; and in 1615 commenced his real career as an architect, in the post of Surveyor-General of the Royal works at a salary of 8s. a day, together with other monetary allowances and also, evidently, the right to private practice. His brilliant professional career for the next 35 years is familiar to us all, but it may be noted here that while employed on his large architectural practice he continued to design masques; he sowed the seeds of modern English town-planning in his lay-outs of Covent Garden, Whitehall, and Lincoln's Inn Fields; he wrote some "very bad verses";[203] and he carried out extensive researches, published in 1655, at Stonehenge. There is no question of his status in later life: he was an architect pure and simple. He was also a courtier, and suffered severely for his devotion to his royal master during the Civil Wars.

His pupil John Webb (1611–1674) was eclipsed first by the master who had trained him and then, just as fame seemed within his grasp, by the sudden appearance of Wren. He spent three years at Merchant Taylors' School (1625–8) and then became pupil or assistant to Inigo Jones. (It is significant that his master taught him mathematics as well as architecture.) He did much to enhance Jones's reputation by the preface that he wrote to the latter's *Vindication of Stonehenge Restored*; but recent research makes it more and more probable that a large part of the great master's work was carried out by his faithful and self-effacing pupil.[204] A recent article by Mr. Gotch[205] throws light on professional methods at this period. Webb's office was in Scotland Yard, Westminster. He supplied numerous detail drawings (in one case recorded) of chimney-pieces and mouldings, as well as working drawings. These drawings were forwarded (on one occasion at least sewn up in a cardboard case) by carrier to his client, to whom all instructions for the workmen were also sent in a series of letters which have been preserved. These letters prove that Webb had an extensive and aristocratic practice.

Sir Christopher Wren (1632–1723) is undoubtedly the most remarkable figure of this period, if not of all architectural history. The recent bicentenary of his death was made the occasion of recalling the many aspects of his brilliant and even startling career. Born in a country vicarage, with influential relatives who helped him up the ladder, he was an infant prodigy in childhood, and at Westminster School (1641–6) showed signs of great natural abilities. He spent three years between Westminster and Oxford in scientific research in London, and, at an age when a modern schoolboy is dividing his attention between socks and football scores, he translated into Latin a book on geometry. He took his degree at Oxford at eighteen years of age, became a Fellow of All Souls at twenty, and was appointed (rather to his surprise) Gresham Professor of Astronomy at twenty-four. He was largely instrumental in founding the Royal Society and became its President in 1680. He produced a whole list of inventions, beginning with an astronomical instrument which he dedicated to his father in Latin when he was thirteen, and including in later years a weather-clock, an artificial eye, a new hard flooring composition, and devices for improving coach-building and submarine navigation! In 1668 he was described by Newton as

[202] Chancellor, *op. cit.*, p. 55.
[203] *Ibid.*, p. 91.
[204] J. A. Gotch, *Inigo Jones: Some Surviving Misconceptions*, R.I.B.A. JOURNAL, 16th August, 1924.
[205] J. A. Gotch, *Some Newly-found Drawings and Letters of John Webb*, R.I.B.A. JOURNAL, September 24th, 1921.

" one of the foremost geometers of his day " ; in fact, he was one of those rare men to whom all things are possible.

His first architectural work seems to have been a doorway at Ely Cathedral in *c.* 1663,[206] but as early as 1655 he had prepared an estimate (over £13,000) for alterations to buildings at Windsor.[207] He also declined a commission from the King to examine and repair the fortifications of Tangier, and in 1662, while still a professor of astronomy, was consulted about St. Paul's. It is extremely unlikely that he ever had any ordinary architectural training. His visit to France, when he did much sketching in and round Paris, was undertaken during the Plague Year, 1665–6. But though he entered architecture at some thirty years of age, his long life left him sixty years more of crowded work, and the brilliant opportunity afforded by the Great Fire allowed full scope to a genius that was nothing short of marvellous. A mere list of his buildings—from St. Paul's, Hampton Court, and Greenwich downwards—would fill many pages of this essay. The incidents of his career are set out in his *Parentalia* and in many subsequent biographies. But it is not all pleasant reading : the man who, above all others, has left his personal mark on London architecture, spent his last days in an atmosphere of intrigue and ingratitude.

Wren wrote no book on the Orders, but in 1678 there appeared an amusing little work on building construction, *Mechanick Exercises*, which affords a welcome change from Vitruvius, and was written by a " hydrographer, mathematician " (and shopkeeper), one Joseph Moxon, who, like Wren, was a Fellow of the Royal Society. Craftsmanship in Wren's day was still a living thing, and had not yet been completely smothered by Palladian pedants.

It is impossible here to deal individually with the host of well-known English architects of the eighteenth century. Instead, I propose to borrow from Galton the idea of " superimposed portraits," and, by comparing the biographies of some 33 famous men, to attempt some generalisation as to type, though the individuals are as various in type as could well be imagined. At the outset one must exclude at least six who were definitely amateurs; Lord Burlington, Lord Pembroke, Dean Aldrich, " Doctor " Clarke, Sir James Burrough, and James Essex. The first two were *virtuosi* of the best sort ; they certainly did much to foster an interest in architecture of the academic sort that was favoured in their day, and they were directly instrumental in furnishing opportunities of study and advancement to promising young architects. Thus Lord Burlington actually lodged Kent in his own house for many years. The architect of this period dedicated his frequent folios to these " noble patrons " in terms of nauseating servility, but he did depend on them very largely for his livelihood. It was part of a gentleman's education to understand " architecture " (*i.e.*, the Orders), to make the Grand Tour, and to build himself a colossal mansion with suites of monumental rooms, based on the formal principles of Palladio. Aldrich and Clarke at Oxford, Burrough and Essex at Cambridge, did actual building ; but, taken as a whole, their work in the two most beautiful towns in England was for worse rather than for better, and the buildings they have left us are poor compensation for those that they destroyed or mangled.

Of the 27 now remaining on our list, it is interesting to note that Campbell, Gibbs, Adam, and Chambers were Scots ; and that Kent, Wood the Elder, Carr, and Ripley were Yorkshiremen (a high proportion of genius for the North, especially as we know nothing of the antecedents of eight of the remainder). Of those whose parentage is recorded, about half came from the upper and professional classes and about half from the artisan class. Three only (Wood the Younger, Dance the Younger, and Robert Adam) were architects' sons, but others were followed by architect-sons who never attained eminence. Bell, Pratt, Vanbrugh, Archer, and Taylor—among others—entered architecture comparatively late in life ; but few of the rest underwent any professional training. Hawksmoor began as Wren's " scholar and domestic clerk," and became his clerk-of-works on the Palace at Westminster when he was twenty-two. Kent was apprenticed at fourteen to a coach-painter, but, having been sent to Rome by some " noble patron," fell in with Lord Burlington there, after which his career was assured. Batty Langley was at first a landscape-gardener, but later founded a " school of architecture " intended chiefly for the education of carpenters ! Gibbs was fortunate, for, after a good education culminating in a M.A. degree at Aberdeen, he was sent by Lord Mar to Rome to study, and while there he maintained himself by making drawings for aristocratic travellers. John Wood first appears as a surveyor of roads ; Carr as a mason. Ripley, another pushful Yorkshireman, walked all the way to London to seek his fortune, worked as a carpenter there, and at the same time kept a coffee-house. As a young man he married a domestic servant (an imprudence mitigated by the fact that she was employed in Sir Robert Walpole's household) ; but at his second attempt, as a widower, captured an heiress with £40,000. Ware, a chimney-sweep's son, attracted the attention of a " noble patron " who sent him to Italy. Dance the Elder is said to have begun as a shipwright, and Flitcroft (a gardener's son) as a joiner.

Travel in Italy was undertaken only by the more fortunate : Gibbs, Ripley, and Ware having already been mentioned. Sir Roger Pratt seems to have turned to architecture while making the Grand Tour ; Kent was sent to Rome by Lord Burlington, and Dance the Younger and Robert Adam by their fathers, who evidently attached importance to this mode of study. But apart from those three architects who were trained by their own fathers, we only know of Vardy, Brettingham, Paine, Morris, and perhaps Hawksmoor who were pupils or assistants in architects' offices. Many of the rest stepped into architecture from the position of a clerk-of-works, a mason, or a carpenter ; while others approached it from painting or sculpture. There is the strange case of Vanbrugh, who was a soldier and a dramatist before he entered our profession. Flitcroft's translation to the higher sphere of building was due to a fortunate tumble off a scaffold in the presence of the all-powerful Lord Burlington. It may therefore be concluded that architectural education in the eighteenth century was almost non-existent ; that though training in an architect's office and travel in Italy were desirable, they were by no means essential ;

[206] Chancellor, *op. cit.*, p. 127.
[207] J. A. Gotch, in *Wren Bicentenary Volume* (1923), p. 14.

and that any ambitious craftsman who took the trouble to " get up " the Orders found the avenue of success open to him.

A pleasant feature of the eighteenth century is the existence of provincial centres of good architecture, such as are associated with Carr in Yorkshire, with the Woods at Bath, with Bell at Lynn, and with unknown but talented masters at Stamford and elsewhere.

The buildings of the period included an incredible number of great mansions for the nobility and the fifty churches founded by Queen Anne. An architect also undertook large schemes of lay-out, such as the work of the Adams in Fitzroy Square and the Adelphi, of Wood in Bath, of Carr at Harewood in Yorkshire, and so on. Paine designed bridges at Kew, Richmond, Chertsey, and Walton, as well as furniture and even vases. Chambers first became famous as a planner of Chinese gardens ; others turned a more or less honest penny by buying antiques in Italy for " noble patrons." Vanbrugh acted as lessee and manager of the Opera House in the Haymarket, which he bought for £2,000 ; and those artistic souls the Adams ran a lucrative business in " real estate " in London, abreast of their more legitimate and professional activities, until an unlucky speculation in cement brought them to ruin. The Adams seem to have been fully cognizant of all the accepted methods of architectural advertising—permissible and otherwise.

It was an age of great wealth (for the few), and some architects made large fortunes. Sir Robert Taylor left £180,000 to found a school of modern languages at Oxford, " Carr of York " left £160,000 to his heirs, and Archer left £100,000 to a nephew ; Chambers drew £2,000 a year while employed at Somerset House. These figures are, however, exceptional, and many of the salaries and fees recorded are small. Hawksmoor was paid £100 " to gratify him for his work " for the Clarendon Press at Oxford.

But perhaps the most remarkable feature of an extremely pedantic period was the number of books written by architects. Of the 27 men now under discussion, at least 18 published books, some of them many books. The majority of these were either copybooks of the Orders, albums of their own designs for " Noblemen's Mansions," or collections of imaginary designs for gigantic mansions that they felt themselves capable of building. Half of them frankly advertise their authors' supposed merits ; nearly all of them contain pages of fulsome flattery of the grandees to whom they are dedicated and by whom they were often financed. Gibbs is said to have made £1,500 by his *Book of Architecture*, in addition to £400 for the plates. But even such few books as were professedly manuals of building-construction and carpentry were mainly occupied with plates of the Orders and of " Gentlemen's Houses." Batty Langley's *Builder's Compleat Assistant* (1738) shows this tendency, his *The Builder's Jewel : or, the Youth's instructor and Workman's remembrancer* (1757) even more so, and one cannot fail to notice that none of the simpler processes of building are described or illustrated in any of these books ; they seem to have been taken for granted. When Mr. William Pain, " Architect and Joiner," published his *The Practical Builder, or Workman's General Assistant*, in 1774, his object was, according to his own preface, " Plainly and faithfully to answer the Purpose of the manual Artificer," yet almost the whole of the book consists of plates of the Orders and of monumental architectural designs, construction being relegated to a few diagrams illustrating the intricacies of geometrical setting-out, and a few more of trussed girders and roofs. His *Practical House Carpenter : or, Youth's Instructor*, is similar in many respects to the last, only 15 plates out of 116 being in the least practical, though there is a valuable appendix containing an exhaustive list of building prices then current.

Very different in character is Sir William Chambers's *Treatise on the Decorative Part of Civil Architecture*. In the third edition of that celebrated book (1791) the author includes an introduction dealing with the qualifications of an architect. After quoting Vitruvius on the same topic, and pointing out how greatly conditions have changed, he proceeds :—

" Such as intend to make it [architecture] their profession should enter the lists with a good store of health, vigor, and agility ; they should neither be lame nor unwieldy ; neither awkward, slow, nor helpless ; neither purblind nor deaf ; nor have any thing ridiculous about them, either natural or acquired. Their understanding should be sound ; the sight and apprehension quick ; the reasoning faculties clear, and unwarped by prejudices ; the temper enterprising, steady, resolute ; and though benevolent, rather spirited than passive, meek, or effeminate. . . .

" And as at the present time few engage in any profession till qualified for the world by a proper school education at least, it must be supposed, that to a competent proficiency in the learned languages, the student adds a thorough knowledge of his own—so as to speak and write it, correctly, at least, if not elegantly ; that he is a good penman, versed in accounts, a ready practitioner in arithmetic, and has received and profited by such other instructions as tend to fix the moral character, to inculcate integrity, to polish the minds, and improve the manners of youth."

" Proficiency in the French and Italian languages is also requisite to him ; not only that he may be enabled to travel with advantage, and converse without difficulty, in countries where the chief part of his knowledge is to be collected ; but also to understand the many, and almost only valuable books treating of his profession, the greater part of which have never been translated."

He must also acquire the technical jargon of his craft, so that his orders may be understood and intelligently executed by the workmen.

" To these qualifications, mental and corporeal, must be united genius or a strong inclination and bias of mind towards the pursuit in question, without which little success can be expected " . . . " As many sorts of knowledge, very opposite in their natures, come under the architect's consideration, his genius must be of a complex sort ; endowed with the vivacity and powers of imagination requisite to produce sublime or extraordinary compositions ; and, at the same time, with the industry, patience, and penetration necessary to investigate mathematical truths ; discuss difficult, sometimes irksome subjects ; and enter into details of various sorts, often as tiresome as they are necessary ; a genius equally capable of expanding to the noblest and most elevated conceptions, or of shrinking to the level of the meanest and minutest enquiries : as Dr. Johnson expresses it, a mind that at once comprehends the vast and attends to the minute."

" Of mathematical knowledge, geometry, trigonometry, and conic sections should be understood, as teaching the con-

struction, properties, contents, and divisions of the forms used in building; likewise of the raising, conveyance, and application of water, as well as for the common uses of life, as to produce many extraordinary effects, very ornamental in gardening, and efficacious in manufactures."

Commenting on this last paragraph, exactly a century ago, that acute critic Joseph Gwilt observes that

"Mathematics have, perhaps, been too much neglected by some of the Architects of this country. The consequence has been the establishment of a new branch of art whose professors are called civil Engineers."

This statement stands to-day as true as when it was written. Whether one can expect a modern architect, whose repertoire is already extensive enough in all conscience, to recapture the design of bridges and fortifications is very questionable; but upon his knowledge of mathematics, geometry, and mechanics—with all their recent applications to structural science—depends his ability to retain the increasing amount of building that is essentially scientific in its nature. Certainly the day is long past when Tredgold's empirical formulæ can be relied upon to see him through all the problems of his profession.

Returning to Chambers's book, we find the long list of the architect's qualifications set out so fully that much further quotation becomes impossible here. He must be above all things a master of design, he must understand perspective and have "a perfect acquaintance with all kinds of proportions," and he "furthermore must be well versed in the customs, ceremonies, and modes of life of all men his contemporaries," so that he may provide effectively for their needs.

"Neither must he be ignorant of ancient history . . . as the established stile of decoration collects its forms . . . from these abundant sources, which time, and the concurring approbation of many ages, have rendered venerable."

Descending to more prosaic matters :—

"To the excellence of the designer's art, must yet be added the humbler, though not less useful skill of the mechanic and accountant,"

including an acquaintance with all building materials and processes, a power "of regulating the accounts with accuracy" and of dealing with "many men of different professions, capacities, and dispositions; all without violence or clamour, yet with full effect." He emphasises the importance of accurate estimating, dismissing with scorn the rough-and-ready method of those who "Value by the square." He explains that "extras" are due as often to whimsical clients as to careless architects, and urges the value, to all concerned in building, of orders in writing. Finally he shows the importance to the architect of foreign travel, partly, it is true, for the purpose of studying "the purest models," but also because "travelling rouses the imagination" and broadens the traveller's mind. Nowadays these passages may perhaps be regarded as pompous and verbose, yet there is hardly anything in them that does not apply with equal force to-day; for though, as in the eighteenth century, architects continually rise from the ranks by sheer force of genius, their talents are developed and their chances of success increased by a liberal and scientific education.

VIII. THE NINETEENTH CENTURY IN ENGLAND.

From the time of John Shute to that of Sir William Chambers, English architecture drew its chief inspiration, for better or for worse, from Rome. Towards the close of the eighteenth century there was a change, and architects began to look to Greece for ideas. Some critics treat this change as a normal development of the classical tradition, arguing that no abrupt break was involved. But, in the present writer's view, the "Greek Revival," as it is commonly called, was as definite a landmark as the Renaissance itself. For nearly 250 years there had been a certain continuity in design (or in borrowing, as hostile writers claim). This continuity was broken at the end of the eighteenth century, and even to-day we are not quite sure of our direction, though the state of architecure is probably healthier than it has been since Wren's time. The nineteenth century has been rightly called "The Age of Revivals" in English architecture; and the effect of revivalism on architects, whether "Greek" or "Gothic" in their sympathies, can be traced clearly enough in their own careers.

As Mr. Budden has pointed out in his survey[208] of that singular movement, the Greek Revival may be ascribed primarily to the publication of the first volume of Stuart and Revett's *Antiquities of Athens* in 1762. But for 140 years or so prior to that date English travellers had taken some interest in Greek art, though their energies had been confined to material loot, and that dangerous architectural weapon—the book of measured drawings—had not yet made its appearance. Stuart and Revett were competent archæologists, and their admirable work laid the foundation of our present knowledge of Greek monuments. But not all English architects accepted it as their Bible: there were some who took very little notice of the new craze, others who were dabbling in mediævalism long before the later Gothic Revival swept them off their feet, and yet others who contrived to make the best of both worlds by designing in the Greek or the Gothic manner with equal readiness according to the dictates of their fancies or their clients.

The following twelve architects may be regarded as typical of those who mainly favoured the Greek Revival: Nash, Sir John Soane, Wilkins, Sir Robert Smirke, Gwilt, Cockerell, Inwood, Basevi, Sir William Tite, Burton, H. L. Elmes, and "Greek" Thomson. More than in any previous period we find a measure of similarity in the details of their lives. Most of them were the sons of middle-class parents—indeed, no less than six were architects' sons, while Smirke (son of a famous painter), Decimus Burton (son of a wealthy builder), and Soane (son of a small builder or bricklayer)[209] came from homes where architecture would presumably be understood. Of the remaining three—Nash, Tite, and Thomson—it is possible that the last-named was of humble birth, but to a Scot this has never been an insuperable obstacle.

No longer do we find the architect dropping haphazard

[208] L. B. Budden, *The Greek Revival in England* (R.I.B.A. JOURNAL, 1909, p. 177).

[209] Or a stonemason. Budden, *op. cit.*, p. 179.

into his profession from another walk of life and at any age up to fifty or so. Eleven at least of the twelve men mentioned above studied architecture as pupils in an architect's office. The only possible exception is Soane, who is said by Mr. Budden[210] to have been " errand-boy " to George Dance the Younger, but Mr. Bolton, writing later and more fully,[211] states that he was articled to him. Most of the architects' sons acquired additional experience, after their articles, in the offices of other practitioners. As regards their general education, only Wilkins is known to have attended a university, and that when his father was practising architecture in Cambridge. He entered Caius College as a scholar in 1796, and took his degree as sixth wrangler in 1800.

Travel abroad now became more than ever an essential part of an architect's education. Seven of our twelve typical architects travelled in Italy during their student days, and it is significant that five of them extended their tour to Greece. It is noteworthy, too, that all but one of the six architects' sons are found among the travellers (Elmes being the exception), showing that their fathers, not all wealthy men, regarded the study of classical antiquities as important. Travelling in Greece was not only expensive but dangerous,[212] though during the Napoleonic wars Greece was more accessible than Italy. Yet several of the architects under consideration spent many years abroad, Cockerell being absent seven years. Soane and Wilkins at least held travelling studentships, the former from the Royal Academy, the latter as one of " West's Travelling Bachelors." Smirke was another successful R.A. student, being awarded the Gold Medal in 1799.

Naturally, perhaps, many of these architects had an academic bias. What Mr. R. P. Jones has amusingly christened the " folio period " of the Georgian Renaissance gave way to another era of architectural book-making in which Cockerell, Wilkins, and Inwood have an honoured place. But their chief books were scholarly volumes on Greek antiquities, thus forming a welcome contrast to the blatant folios of the Georgians. The chair of architecture at the Royal Academy was occupied successively by Soane, Smirke, Wilkins and Cockerell ; and Soane took three years to prepare a course of six lectures to be delivered from that august position. Many of these men were members of the powerful Society of Dilettanti or of the Society of Antiquaries ; it was essentially a *dilettante* period.

Yet nearly all these architects had large, some enormous, practices. They must have been busy and rich men. Sir Robert Smirke, who designed the British Museum, the G.P.O., and King's College (London), declined all " jobs " of a value less than £10,000 as soon as his feet were on the ladder. He also " initiated the employment of two surveyors for taking out quantities."[213] His work, like that of Burton, was partly for the Government, to whom he acted as " attached " architect. Competitions, both open and limited, were frequently held : thus Soane was placed first out of fifteen competitors at 25 years of age for the Bank of England, and H. L. Elmes for St. George's Hall at Liverpool out of seventy-five competitors at 26 years of age. Cockerell and Wilkins also owed much of their success to competitions, and some architects may possibly regret that " Greek " Thomson's Greek design for the Albert Memorial was not accepted. Tite, best known for his Royal Exchange in London, designed a large number of railway stations, not only in England but in France ; Burton, famous for his architectural work in Hyde Park, specialised in seaside lay-outs at St. Leonards and elsewhere, and carried out many schemes for his father, a speculative builder in a large way ; Nash's stucco streets and terraces are familiar to us all. Except for the last-mentioned pair, the chief architects of the Greek Revival seem to have been strictly professional men, taking no part in speculative ventures ; and " Greek " Thomson, although a Scot, appears to have been one of those born artists who worked for art's sake, designing even furniture and carpets with his own hand, and leaving all the business side of his work to a partner.

The Gothic Revival, obscured for the last forty years by a cloud of ridicule, has suddenly been dragged out into the limelight by an admirer who has tempered his enthusiasm with a lightness of touch that is as rare in such criticism as it is welcome.[214] Fair recognition of this misunderstood movement is certainly long overdue. Few of us to-day are entitled to cast the first stone at its weak points ; for we have seen it replaced successively by revivals of Elizabethan, Jacobean, " Queen Anne," Georgian, and even " Neo-Grec "—all within four decades or so. As we pause before the dreary round begins again, we may at least admit that the Gothic revivalists were sincere enthusiasts, and even allow a grain of truth in Mr. Goodhart-Rendel's ingenious argument that the spirit of Gothic persisted throughout the seventeenth and eighteenth centuries ; not the full-blown Gothic of our cathedrals but the mediæval methods of rustic craftsmen who—undismayed by the thunders of the Palladians—continued to build mullioned windows, steep gables, and bold chimneys. Enough ridicule has surely now been cast on all the " Eminent Victorians " by the present generation ; a more sane and generous attitude is suggested by the sound advice in the Book of Ecclesiasticus :—

" Let us now praise famous men, and our fathers that begat us."

For the weaknesses of the nineteenth century architects are at least matched by those of their predecessors, and the Gothic Revival resembled the Palladian Renaissance most closely when it degenerated into a heresy-hunt. Mr. Goodhart-Rendel thinks that, in this country, " Vitruvius had never become more than a canonised policeman,"[215] but both his halo and his authority have been evident enough in previous chapters of the present study. At any rate, the readiness with which the early Victorians changed their allegiance is remarkable.

The real initiation of the movement seems to date from the publication of Rickman's admirable book, *An Attempt*

[210] Budden, *op. cit.*, p. 179.

[211] A. T. Bolton, *Life and Work of Sir John Soane* (R.I.B.A. JOURNAL, 1922, p. 613).

[212] See R. P. Cockerell, *Life and Work of C. R. Cockerell* (*Archl. Review*, 1902, Vol. XII, pp. 44-6).

[213] *Dictionary of the Architectural Publication Society.*

[214] H. S. Goodhart-Rendel, *English Gothic Architecture of the XIXth Century* (R.I.B.A. JOURNAL, 1924).

[215] *Ibid.*, p. 322.

to Discriminate the Styles of Architecture in England from the Conquest to the Reformation, in 1817; its full tide was reached with the appearance of Ruskin's *Seven Lamps* in 1849 and the first volume of his *Stones of Venice* two years later; its decline may be placed in the eighties of last century. To a large extent it was book-architecture, but nevertheless it responded to something in the national temperament that was English and healthy, while eventually it led to an enthusiasm for the building crafts that was altogether praiseworthy. The defects of Ruskin's architectural philosophy have been emphasised so much lately that we are apt to forget its real merits. It is true that he was intensely dogmatic and blindly partisan; that he exaggerated the purely romantic and ornamental details of architecture while almost ignoring form and proportion; and that he preferred Italian and French Gothic to our own. He did actual harm, too, in denying that merely utilitarian buildings should be regarded as architecture; and it was during the height of his influence that industrialism covered our country with hideous factories, cottages, and railway stations. But he created a genuine popular interest in his own pet styles, and on the whole his plea for sound construction and good craftsmanship absolves him for his serious errors in other directions. Moreover, his insistence on the human aspects of architecture as reflecting life, if often fanciful, was a welcome reaction from the lifeless formalism of the aristocratic eighteenth century.[216]

The architects of the Gothic Revival—especially Pugin, Burges, Street and Bodley—were deeply religious men and enthusiastic artists. Like their predecessors of the Greek Revival, they were mostly the sons of professional men. Thus the fathers of Sir Gilbert Scott and Sir Arthur Blomfield were clergymen, Pugin was the son of an architect, Burges of a civil engineer, Pearson of a painter, and Bodley of a doctor. Burges and Blomfield had a university education; but, after it, they, like all the other great Victorians, served their articles in an architect's office. Early in the century, it was the fashion for the pupil to "live in," like the old-time London apprentice. Thus Scott lived for four years in his master's house at Homerton, and later his first pupil, Bodley, spent five years in the same way. The term of articles varied from three to five years, and the age of the pupil when he commenced his training was anything from fourteen upwards. Sketching out-of-doors was the usual means of extending a pupil's education; in England during his period of articles, in France and Belgium or sometimes in Italy in later years. There are few references to the Academy schools in the biographies of these men, but Scott attended lectures there and also went to Maddox's drawing school. Pupilage was usually followed by a few years as assistant before practice was commenced. Street served for five years as "improver" in Scott's office after completing his articles in a provincial town. In student days, as in later life, most of the Gothic revivalists were tremendous workers as well as enthusiasts. Whatever we may think about the movement itself, we can all agree that there is an element of thrill and romance in sketching Gothic detail that one finds in no other style.

Architectural competitions loom very large in this period. Scott, who was born in 1811, won his first church competition in 1838, a limited competition for the Martyrs' Memorial and another for St. Giles', Camberwell, in 1840, the Lutheran Church at Hamburg in 1844, the Town Hall at Hamburg in 1855, and St. Pancras Station and Hotel in 1865. He was unsuccessful with his designs for the Law Courts and also for the Foreign Office, but eventually carried out the latter (after a "Battle of the Styles") in Renaissance fashion. Burges won another famous competition for Lille Cathedral (1856) at 29 years of age, Waterhouse the Manchester Assize Courts (1859) at the same age, and Street the Law Courts (1866) at 32, while Barry's successful ventures included the Houses of Parliament and the Reform Club. The drawings submitted in competition for the Law Courts, especially those by Scott[217] and Street, show the astoundingly high level of draughtsmanship expected and obtained in these competitions, usually accompanied by a voluminous report. Scott and Waterhouse, especially, had enormous practices which they built up entirely by their own brains and energy. At his death, Scott left a fortune of £120,000.

The range of the architect's work, besides embracing such novel subjects as sanitation, now included the design of many minor features of church embellishment. Bodley's genius for ecclesiastical craftsmanship is well known, but Pugin long before him was a master of all the crafts, and Barry established (in connection with the building of the Houses of Parliament) schools for training stone-carvers, wood-carvers, smiths, glass-painters, and encaustic tile makers. Yet while Bodley was designing chintzes and wallpapers, Burges jewellery and furniture, we hear very little of town-planning, and Scott's Albert Memorial is the chief example of Victorian monumental architecture.

Except Pugin, who was afflicted with the artistic temperament, went mad, and died a disappointed man, most of the leaders of the Gothic Revival obtained their reward of riches and honours in full measure. Many of them became Academicians, some Presidents of the R.I.B.A., and several were awarded the Royal Gold Medal for Architecture. Only a few of them wrote books of any importance: Pugin's volumes of measured details still form a standard work of reference; Street's studies of Gothic architecture in Italy[218] and Spain[219] had a great and indeed regrettable influence on English design; and Sir Gilbert Scott's lectures on *Medieval Architecture*[220] at the Royal Academy and his *Gleanings from Westminster Abbey*[221] reveal him as a scholarly writer as well as a successful architect. He also published an interesting if sometimes pompous autobiography.[222] But, compared with the Palladians, the Gothic revivalists excelled as writers in quality rather than quantity, though the works

[216] On this see Halsey Ricardo, *The Architect's Debt to Ruskin*, in the *Builder*, 26 September, 1924.

[217] Photographs of these are preserved in the R.I.B.A. Library.

[218] G. E. Street, *Brick and Marble Architecture in Italy*, 1855.

[219] G. E. Street, *Gothic Architecture in Spain*, 1865.

[220] Published 1879.

[221] Published 1863.

[222] Published 1879.

of laymen like Ruskin, Rickman, and J. H. Parker penetrated to every middle-class Victorian home, and their influence still lingers undiminished in sundry placid cloisters and " colleges of sound learning."

The spacious days of Queen Victoria also saw the foundation and development of many of the institutions that now watch over the interests of architects young and old. The R.I.B.A. was incorporated in 1837, but it had been preceded by various mushroom forerunners, described in Mr. Gotch's admirable history of its first fifty years.[223] In those early days it appears to have been more of a learned society—almost a *dilettante* society—than a trade-union. Its inception was largely due to the energy of its first honorary secretary, Professor Donaldson, and it was intended " to uphold the character and improve the attainments of architects."[224] At first it consisted of about 80 members, a select little band who would be startled if they could see the present roll of members, now numbering many thousands. Its first volume of *Transactions* appeared in 1836, just before the Royal Charter was obtained ; in 1837 Sir John Soane in his will founded the famous prize that still bears his name, a register of assistants seeking employment was opened, and a lecture was given on that perennial subject " Dry Rot " ; in 1838 the eternal problem of regulating architectural competitions raised its head ; and in 1859 the Institute moved from Grosvenor Street to its present handsome but inflammable quarters in the heart of West-End tailordom. The first " Voluntary Architectural Examination " was held in 1862, and the first compulsory examination for Associateship in 1882. Meanwhile the Architectural Association had been founded, in 1847. Before the end of the century several other leading schools of architecture were established, and at last a full-time academic training was offered as an alternative to the hitherto universal but not always satisfactory system of pupilage.

The end of the Gothic Revival forms a convenient point for terminating this study. During the past few months two great architects—Jackson and Collcutt—whose careers commenced in that busy and exciting period, have died ; and to extend the story beyond the 'eighties would carry it within the memories of those who are merely middle-aged. The last fifty years have seen the birth and death of the much-maligned " Arts and Crafts " movement, and the consequent development of a school of domestic architecture in England which has roused the admiration and envy of our colleagues abroad. We are now faced with many urgent professional problems raised by recent changes in social conditions and building methods : the relation of the architect to the engineer in connection with steel structures ; his attitude to town-planning, housing, and speculative building ; his education and his status. Some day these too will form legitimate topics for the historian ; at present they are too much with us to allow of philosophic retrospect.

There is a hint in the air that the age of revivals is over at last. If that be so, then architecture may enter upon a new and glorious chapter of its history, worthy of our great forefathers—men of every time and land—who have raised our ancient calling to its proud position as the " Mistress Art."

A Short Bibliography

(Abbreviations.—A.R. = " Architectural Review " ; J. = " R.I.B.A. Journal " ; S.P. = " R.I.B.A. Sessional Paper.")

NOTE.—The following list of books and articles bearing on the subject of this essay is not exhaustive. It merely includes a selection of the most authentic and accessible works, and is limited to the countries and periods treated herein. Only such books and articles as are of definite biographical value are given. Wherever possible, the date of the first edition is stated, not that of subsequent editions or of translations (if any) into English.

CHAPTER I. THE FIRST ARCHITECTS.

The footnotes in the text give the few sources available.

CHAPTERS II AND III. GREECE AND ROME.

The article " Architectus " in Daremberg and Saglio's *Dictionnaire des Antiquités* (1877, &c.) by M. Charles Lucas, is the only summary of any value for these periods. The articles s.v. " Architect " in the *Dictionary of the A.P.S.* and in Sturgis' *Dictionary of Architecture and Building* are very slight, and the *Encyclopædia Britannica* has nothing under this head. For other references see footnotes in the text. The available sources are very scanty.

CHAPTER IV. THE MIDDLE AGES.

The notices of English mediæval architects in Milizia and other collections are of no value. For William of Wykeham see *Dict. of Nat. Biog.* For France see Bibliography to Chapter VI, also Félibien as below ; but this only goes up to the end of the fourteenth century. See also references in footnotes to this essay to Salzman, Coulton, Jackson, all good.

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Ferrey, B. *Early Medieval Architects* (S.P. 1864).
Lethaby, W. R. *Westminster Abbey and the King's Craftsmen* (1906).
Papworth, W. *Early Medieval Superintendents* (S.P. 1860-1).
Prior, E. S. *The Cathedral Builders in England* (1905).
Quicherat, J. *Facsimile of the Sketchbook of Villard de Honnecourt* (1859).
Scott, Leader (pseudonym). *The Cathedral Builders* (1899).
Street, G. E. *Gothic Architecture in Spain* (1865).

CHAPTER V. THE RENAISSANCE IN ITALY.

(*a*) COLLECTIONS.

Baglione. *Vite de' . . . architetti dal pont. di Greg. XIII–Urbano VIII* (1642).
Milizia, F. *Le Vite dei più celebri architetti* (1768).
Passeri. *Vite di . . . . architetti che hanno lavorato in Roma, morti* 1641-73 (1772).
Soprani and Ratti. *Pittori, scultori, ed architetti Genovesi* (1768).
Temanza, T. *Dei più celebri architetti e scultori Veneziani* (1778).
Vasari, G. *Le vite de' più eccellenti pittori, scultori, ed architetti* (1550).

(*b*) MONOGRAPHS.

Alessi, Galeazzo. By M. S. Briggs (A.R. 1915).
Bernini, Gian Lorenzo. By Baldinucci (1682) ; by D. Bernini (1713) ; by M. S. Briggs (in *Burlington Mag.*, 1915) ; by Max v. Boehm (1912) ; by Fraschetti (1900) ; by F. Pollac (1909) ; by R. Norton (1914) ; by M. Reymond (N.D. recent).

[223] *The First Half-Century of the R.I.B.A.* (JOURNAL, 1922).

[224] *Ibid.*, p. 454.

ERRATUM : Footnote 149 (p. 608) should read " Milizia II, 93," not " Vasari II, 93," and the subsequent references on p. 609 are all to Milizia, not to Vasari.

Bianco, Bartolommeo. By M. S. Briggs (A.R. 1915).
Borromini, F. By A. Muñoz (N.D. recent).
Brunellesco (or Brunelleschi), F. By Leader Scott (1901); by P. S. Worthington (J. 1909); by M. Reymond (N.D. recent).
Buonarotti, Michelangelo. By H. F. von Geymüller (1904); by C. Holroyd (1903); by R. Rolland (N.D. recent); by J. A. Symonds (1893).
Cortona, Pietro da. By A. Muñoz (N.D. recent).
Leonardo da Vinci. By Anon (A.R. 1914).
Ligorio, Pirro. By C. A. Harding. (J. 1923).
Longhena, Baldassare. By M. S. Briggs. (A.R. 1916).
Lurago, Rocco. By M. S. Briggs. (A.R. 1915).
Michelozzi, Michelozzo. By F. R. Hiorns (J. 1912).
Palladio, Andrea. By B. F. Fletcher (1902).
Peruzzi, Baldassare. By F. W. Bedford (S.P. 1902); by J. H. Worthington (J. 1913).
Ricchini, F. M. By M. S. Briggs (A.R. 1915).
Sangallo, G. and A. da. By R. Falb (1902); by P. S. Worthington (J. 1921).
Tibaldi, Pellegrino. By M. S. Briggs (A.R. 1915).
Vasari, Giorgio. By R. W. Carden (1910).
Vignola, G. Barozzi da. By M. S. Briggs (A.R. 1915); by F. R. Hiorns (J. 1911).

CHAPTER VI. THE RENAISSANCE IN FRANCE.

(*a*) Collections.

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Blomfield, R. T. *The Italians at Fontainebleau* (A.R. 1902).
Dilke, Lady. *French Architects . . . . of the Eighteenth Century* (1901).
Lance, A. *Dictionnaire des architectes français* (1872).
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Vachon, A. *Les Grands Maîtres Maçons* (1910).
(See also the works of Palustre, Ward, Blomfield, and Jackson cited in the footnotes to the text of this essay).

(*b*) Monographs.

Du Cerceau family, the. By H. von Geymüller (1887).
Gabriel, A. J. By E. de Fels (1912).
Philibert de l'Orme. H. Clouzot (1911); by R. T. Blomfield (A.R. 1904-5).
Goujon, Jean. By P. Vitry (N.D. recent).
Lescot, Pierre. By R. T. Blomfield (S.P. 1911).

CHAPTER VII. THE RENAISSANCE IN ENGLAND.

(*a*) Collections.

Chancellor, E. B. *Lives of the British Architects* (1909).
Cunningham, A. *Lives of the British Painters, Sculptors, and Architects* (1829).
(The lives of most of the chief British architects of the Renaissance are given in the *Dict. of Nat. Biog.* and many in the *Encyc. Brit.*; see also the admirable notices in the *Dict. of the Architectural Publication Society.*)

(*b*) Monographs.

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Dance, George. By R. T. Blomfield (A.R. 1901).
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Wren Sir Christopher. By his son (" Parentalia "), (1750); by various authors (" R.I.B.A. Bicentenary Vol.") (1923); by J. Elmes (1823); by L. Milman (1908); by A. Stratton (1897); by L. Weaver (1923).

CHAPTER VIII. THE NINETEENTH CENTURY IN ENGLAND.

(*a*) Collections.

Adams, M. B. *Architects from George IV to George V* (J. 1912).
Budden, L. B. *The Greek Revival in England* (J. 1909).
Eastlake, Sir C. L. *A History of the Gothic Revival* (1872).
Goodhart-Rendel, H. S. *English Gothic Architecture of the Nineteenth Century* (S.P. 1924).
Gotch, J. A. *The First Half-century of the R.I.B.A.* (S.P. 1922).
Marriott, C. *Modern English Architecture.* (See Chapter VIII, " The Gothic Revival," 1924).
(The lives of nearly all the chief architects (deceased) of the nineteenth century are given in the *Dict. of Nat. Biog.*, and many of them in the *Encyc. Brit.*, but the best biographical notices for the first part of the century are to be found in the *Dict. of the Architectural Pub. Society*).

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Pearson, J. L. By J. E. Newbury (A.R. 1897).
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Waterhouse, Alfred. By T. Cooper (J. 1905).

The author of this Essay hopes to publish shortly a book bearing a similar title, but dealing more exhaustively and intimately with the training, status, and work of the Architect in History.

Reviews

ELEMENTS OF FORM AND DESIGN IN CLASSIC ARCHITECTURE. *By Arthur Stratton, F.R.I.B.A.* [*Batsford.* 28*s. net.*]

This beautiful book is a most welcome addition to the library of architecture. Mr. Arthur Stratton has here collected for the use of students, and, in fact, for all architects, a splendid series of plates illustrating the principles of composition. His classification of architectural forms is by the plan, and he shows how each form, both in section and elevation, is related to the plan. Nothing could be simpler or more logical; yet this method of exposition enables him to give us an idea of the variety, complexity, and, one may add, the beauty of this classic architecture, which is built up from quite elementary geometrical forms.

He begins with the circular plan and we are shown a number of different treatments of this *motif*—for instance, isolated buildings on a circular plan with peristyle, circular domed buildings with external or internal ambulatories, interiors with or without galleries, and many others, and accompanying these variations of the plan are significant variations of roof covering and lighting arrangements. Next he considers circular and rectangular forms united, and, as may be imagined, the range of his subject has already been greatly increased. Hence to square plans, octagonal plans, semicircular and elliptical plans, rectangular plans disposed for internal effect, internal corridors, vestibules, staircases, gateways and porches. All these are illustrated by examples distinguished in themselves and beautifully drawn; so the book is of immense value to the practising architect.

The Classic style is here not so much defended as taken for granted. By the very simplicity of his outlook, Mr. Stratton succeeds in presenting to us an argument far more powerful than it might have been had he adopted the dual purpose of illustrating the Classic style in operation while at the same time contrasting it with other styles. This work of contrast is for the reader himself to perform. One obvious way, therefore, to profit by this book is to take each of the designs here shown and strip off every Classic column, substituting for it bare constructional posts, or some type of pillar unaccompanied by entablature; such a process will throw much light upon the function of the Classic order. Next one may in imagination strip off all the complex mouldings which grow out of the order and give it æsthetic support. There will then remain the elementary geometrical forms which constitute the "shells" of these designs. It is noteworthy that these geometrical shells are nominally the subject of Mr. Stratton's book. "A geometrical basis," he tells us, "should govern all design, for geometrical forms are naturally more pleasing than irregular figures. The circle, the square and the rectangle, being elemental, are of most frequent occurrence. Certain accepted methods of treating simple circular, polygonal, square and rectangular plans, both internally and externally, cannot be ignored, and familiarity with them derived from a study of the finest works of all times and all countries affords a broad foundation on which to base further solutions." In laying before the student a selected number of architectural compositions in the Classic style, which include combinations of such elementary geometrical shapes as have proved to be of permanent interest and utility to designers, Mr. Stratton hopes that he will give to students knowledge of at least one very important group of architectural precedents, and this knowledge should exert a stabilising influence upon their imaginations. The geometrical forms could have been presented to the student in their basic state without the trappings of the Classic style, but in such form their hold upon his interest and attention would have been so seriously diminished that the primary purpose of the book would probably have failed.

A very cursory glance at the principal monumental buildings that are being erected at the present day will suffice to show that the particular method of design illustrated in Mr. Stratton's pages is not so far removed from modern practice. Thus he cannot be accused of leading his students into architectural byways or of causing their isolation from the main trend of modern development. As he points out, "the greater part of the best European and American architecture is obviously based upon the common classic inheritance deep rooted in principles which have given to the world the supreme achievements of ancient Greece and Rome. The awakening of the fifteenth century in Italy marked a new era of enlightenment and advance in the arts, and as a result of the appreciation of antique models brought about a widespread return to the principles of design by which they are governed. Consequently the culminating periods of Greek and Roman architecture have here been drawn upon as well as the whole range of matured Renaissance architecture in Europe. Ideas developed in continuous sequence during many centuries are here collected. Further, it has been realised that historical motives can be standardised for reference, and that themes acknowledged to be of superlative interest are capable of fresh development irrespective of style or scale."

I have quoted this passage at length because it so well describes and justifies the purpose of this book. Mr. Stratton is not a sectarian. By means of the examples here presented he tells us in effect: "This is what the Classic style can do with the elementary geometrical shapes which are for ever recurrent in building." Whether any other style can do as well or

better remains an open question. It remains to be said that the book is exquisitely produced, and Mr. Stratton is fortunate not only in his publisher but in his collaborators who have contributed the very fine set of line drawings.

A. Trystan Edwards [*A.*]

THE LIFE AND WORK OF SIR JOHN SOANE.

By H. J. Birnstingl. [*London. Ernest Benn, Ltd.*]. *Masters of Architecture Series.* 10*s.* 6*d. net.*

This volume on Sir John Soane, by Mr. H. J. Birnstingl, is one of the most interesting of the series *Masters of Architecture*, by Messrs. Benn Bros. The practising architect will not obtain much information from it which he does not already possess, but it is a concise treatment both of *The Life and Work of Sir John Soane*, admirably illustrated by Mr. Yerbury's photographs.

One cannot help feeling that it is somewhat out of date to worry about whether Soane copied a certain order or not. Soane was in essentials a "Modernist"; he not only had a great knowledge of classical details, but a sound knowledge of construction. It is quite possible that much of the discredit and loss of prestige which architects have experienced in the past generation are largely due to the unintelligent mixing up of the pedantry of archæology with functional design.

Mr. Birnstingl is in deep water when discussing æsthetic principles. Everything which has ever been done from St. Paul's Cathedral downwards has been criticised, but criticism of works of art is usually of little value, as it is so often merely destructive. Soane obviously did not suffer from any lack of ideas. The old question of whether it is legitimate to put recesses in a blank wall is beside the point, and the statement that it exhibits a paucity of ideas is not sound; he who puts a recess in a wall exhibits at least one more idea than he who leaves it blank; the question whether it is not better taste to leave it blank depends entirely on the individual work under discussion. After all, the real thing about a work of art, whether architecture, painting or sculpture, is: Does it or does it not make an emotional appeal to the beholder? The Bank can scarcely be mistaken for anything else, for its purpose is admirably expressed by its exterior. It is refreshing that the design for the rebuilding is much more on the lines of a quiet, dignified mansion than a *tour de force* in heavy classic, such as our American friends are so fond of. It was not necessary for the Bank of England to endeavour to impress anybody.

It is to be regretted that the author and publishers did not find it possible to show a few of Soane's most ingenious and able plans. Imaginative planning was undoubtedly Soane's long suit; he seems to have had that inventive capacity so largely possessed by such men as the Brunels and other early nineteenth century inventors and engineers.

Although he was easily the most original architect of his day, his imagination was not confined to the niceties of new compositions in classical forms; he was excellent at construction, and the first architect to make a fire-proof building in England since the Roman period. The pleasure which he took in vaulting is well shown by numerous illustrations. How admirably he was served by his craftsmen is well shown by the plates, especially 12 and 13, illustrating the old Dividend Office at the Bank of England.

Two of the best photographs in the book are of the Bank, No. 7, the Princes Street entrance, and No. 16, Princes Street entrance vestibule. It is difficult to recollect any vestibule of the same scale or size anywhere which has a similar dignity and bigness.

W. T. Benslyn [*A.*].

THE ANNUAL REPORT OF THE S.P.A.B.

The Society for the Protection of Ancient Buildings was founded by William Morris, Philip Webb, and other members of that brotherhood in the year 1877. The present annual report is, therefore, the 48th of the series.

It has its link with the past in the reprint of the principles of the Society as set forth upon its foundation, which, as in every year, are here included without alteration.

The Society's concern with the present is manifest by the speech made by the Earl of Crawford and Balcarres at the annual meeting in June, and here reported.

Together, these two statements are an epitome of the aims and history of the Society. The first can surely have been written by none other than William Morris himself. The simple, direct, dignified prose bears every evidence of his hand. Lord Crawford's speech was delivered to an audience, and is therefore not altogether on the same plane. It is, however, a notable utterance, and provides a most interesting comparison with the earlier pronouncement.

The first thought that comes to the mind on reading the report is that the enemy has changed. In the early years, "Restoration" was the foe; the "Restoration" of those years of revived interest in Gothic architecture, which so lamentably failed to see the true inwardness of mediæval building, and only succeeded in destroying the interest of so many of our churches, turning them, as Morris said, into feeble and lifeless forgeries.

The clergy and the architects were the chief offenders, and the Society spared them not. The writer's earliest recollections of the "anti-scrape" go back to the time of a pupilage in a diocesan surveyor's office, sometime in the early 'nineties, with a white-haired clergyman bringing a particularly forcible letter from the able secretary of the time with reference to the addition of a new organ chamber to the church. There was pathetic upholding of hands. There were plaintive demands as to "what was to be done with these fellows, some of them no better than atheists."

In these latter days, however, both the church and the

architects are in general sympathy with the Society's aims, restoration of the " scrape " variety is less common, though not, alas, obsolete, and the foe must be looked for elsewhere. Lord Crawford shows where the modern danger lies.

Destruction, not restoration, is the enemy of to-day. And herein lies some heart-searching for practising architects. Here is a humble cottage, old and well-stricken in years, shaken and not a little weary, having for two hundred years sheltered men and women and children, seen births and deaths, been the background of many human lives. Its walls are bulging, its timbers decaying.

Is not our very solicitude for the continuance of its existence to some extent a confession of inferiority and failure ?

Mediæval builders were less careful of the work of their preceding generations.

A superb confidence in the value of their own work made them almost indifferent to the protection of ancient buildings where these in any way interfered with new proposals. And, if we had any security that modern work would be sound and beautiful, we might be less concerned at the disappearance of some of the old buildings which must inevitably be removed to make room for the new. Alas, the melancholy examples of twentieth century buildings which we see growing with the speed of fungoids on every great new road, forbid any such confidence, and we are left with the conviction that to assist the Society is better than to stand aloof from it.

The fate of Waterloo Bridge is still *sub judice*, but, when the battle has been won, the Society may justly claim to have fought valiantly and well for the salvation of this, the finest of London's bridges. Lord Crawford lays stress upon the fact that a large number of bridges have this year come under the consideration of the Society, proving, if proof were necessary, how it has moved with the times, and is alive to present-day needs and dangers.

The action taken in the matter of the London City churches and the Union of Benefices Bill is another instance of this. W. H. Ansell [*F.*]

Correspondence

INDUSTRIAL RESEARCH.

24 *September* 1925.

The Editor, Journal R.I.B.A.,

Dear Sir,—Architects are often reproached on account of their indifference to developments in building materials, which, though possibly justified in the case of those of the mature age of the writer, is certainly not true of the younger men, by whom I have heard it suggested that more of your space might sometimes be devoted to such topics. Hoping that you may share this view, I have the privilege to introduce to you a very able correspondent who has consented to send you, from time to time, information in a lay form about the developments in metals (other than iron) used in buildings.

We have all had our problems of zinc flats, lead gutters, corroded and tarnished gas and water fittings and hardware, and we may not all be aware that work on these and many kindred subjects is proceeding for our benefit and that of the public. Dr. R. S. Hutton is the Director of one of the most successful Research Associations, formed by an important combination of Institutions or Societies interested in metals, supported by trading firms and the Industrial Research Department. This Association not only collects and classifies current researches for members but initiates and controls a large number of investigations carried on at various centres by salaried researchers whose reports are made public from time to time by the reading of papers and by the Press. Among these researches is one upon the corrosion of metals by the atmosphere, initiated some years ago by the R.I.B.A., which is proceeding now with two full-time researchers and upon the Committee for which our Institute is still fully represented. Dr. Hutton, acting as he does as Hon. Secretary for this Committee, is in touch with architects' problems and views. Among his many activities he is editor of a journal published by the Association referred to, which appears as a small pamphlet full of concise and inspiring digests of what is going forward, and from this and other sources he has been good enough to offer, amid very heavy duties, to send to you, Sir, for publication, such occasional notes as may, I hope—and in many cases I know will—interest your readers.—I am, Yours faithfully,

Alan E. Munby [*F.*]

MR. REGINALD HALLWARD'S EXHIBITION.

Those who, like myself, are acquainted with this artist's work must have noticed how strikingly it gains when widely varied examples of it are thus brought together. The " one-man show " is, as we know, a severe test ; many cannot face it, and many others lose ground under the ordeal ; for in the one-man show no secrets are hid. The artist whose individuality appears stronger when his work is thus displayed, who expresses in a hundred frames the thought not to be packed into the narrow act of a single canvas, is obviously worthy of being understood, but Mr. Hallward's show does not seem to have been particularly well attended and it is a question whether his work has ever won the recognition it deserves.

In the limited space now available it is only possible to refer to what is, for us, the first matter of interest in Mr. Hallward's varied activities—namely, his decorative design. This is as individual as that of William Morris ; it is indeed more so, for Morris's design was rooted in tradition, as we were reminded a few years ago when the Rheims tapestries were on view at South Kensington. Mr. Hallward's designs, on the other hand, owe nothing to tradition except the instinct with which the designer addresses himself to his work : they call to mind neither Romanesque, Byzantine nor Gothic, yet partake of the spirit of all of them. They are individual, yet they are devotional. We are so drenched with the stark, imitative, slick, plausible designs, purveyed to us by firms who besiege our custom like flies, that tradition, which is "what the public wants," has become the stock in trade of the cheapjack ; sincere and individual design, which is all architecture should be concerned with, seems odd, and the salesman sets his mark upon our public buildings and our churches as he does upon our villas and our shops. H. B. Creswell [*F.*].

REGISTER OF ARCHITECTS WILLING TO TAKE RECOGNISED SCHOOLS STUDENTS IN THEIR OFFICES.

On the recommendation of the Board of Architectural Education, the Council have decided to establish at the office of the R.I.B.A. two registers :

(1) a register of advanced students of recognised schools,
(2) a register of the names of architects willing to take such students.

The intention is in this way to assist advanced students up to the stage of the completion of their qualifications for exemption from the Final Examination ; one of the qualifications for exemption from the Final Examination being twelve months' experience in an office during the fourth and fifth years of the school course.

The Council hope that general use will be made of the registers, and that as many Architects as possible will place their names upon the register.

R.I.B.A. EXAMINATIONS.

The following are the dates for the forthcoming R.I.B.A. Examinations :—

Intermediate Examination.

20, 21, 23, 24 and 26 November 1925. (Last day for receiving applications—17 October 1925.)

28, 29, 31 May, 1 and 3 June 1926. (Last day for receiving applications—23 April 1926.)

Final and Special Examinations.

2, 3, 4, 5, 7, 8 and 10 December 1925. (Last day for receiving applications—30 October 1925.)

7, 8, 9, 10, 12, 13 and 15 July 1926. (Last day for receiving applications—4 June 1926.)

Examination for the R.I.B.A. Diploma in Town Planning.

30 June, 1, 2 and 5 July 1926. (Last day for receiving applications—1 March 1926.)

R.I.B.A. Intermediate Examination, November 1925.

The centres for this examination will be London and Leeds. At both centres the examination will be held from 20 to 24 November 1925 inclusive.

At the London centre the oral examination will be held on 26 November, at the Leeds centre on 25 November.

THE ARCHITECTURE CLUB EXHIBITION.

The Third Exhibition of the Architecture Club, comprising Recent Architecture, Architectural Decoration and Architects' Preliminary Sketches, will be held in the R.I.B.A. Galleries from Tuesday, 27th Oct., to Saturday, 14th Nov., 1925, inclusive (Sundays excepted). The Exhibition will be open to the Public from 10 a.m. to 8 p.m. Admission 1/- including catalogue.

R.I.B.A. SOIRÉE.

To celebrate the amalgamation of the Society of Architects with the R.I.B.A., a Soirée will be held in the R.I.B.A. Galleries on November 13th. Invitations are now being issued and it is expected that the occasion will be marked by a large and representative gathering of members and guests.

Notices

THE OPENING GENERAL MEETING.

The first General Meeting (Ordinary) of the Session 1925–26 will be held on Monday, 2 November 1925, at 8.30 p.m., for the following purposes :—

To read the minutes of the sixteenth General Meeting of the Session 1924–25, held on 22 June 1925 ; formally to admit members attending for the first time since their election or transfer.

To read the names of candidates nominated for election on 30 November 1925.

Mr. E. Guy Dawber, F.S.A. (President), to deliver the inaugural address of the Session, and to unveil and formally present the portrait of Mr. J. Alfred Gotch, F.S.A., Past President, painted by Mr. T. C. Gotch.

To present the R.I.B.A. Medal and Diploma for the Best London Street Frontage, 1924, to Messrs. F. H. Greenaway and J. E. Newberry, FF.R.I.B.A.

ELECTION OF MEMBERS.

Associates who are eligible and desirous of transferring to the Fellowship class are reminded that, if they wish to take advantage of the election to take place on 15 February 1926, they should send the necessary nomination forms to the Secretary R.I.B.A. not later than 28 November 1925.

LICENTIATES AND THE FELLOWSHIP.

The attention of Licentiates is called to the provisions of Section IV, clause 4 (*b*) and (cii), of the Supplemental Charter of 1925. Licentiates who are eligible and desirous of transferring to the Fellowship can obtain full particulars on application to the Secretary R.I.B.A., stating the clause under which they propose to apply for nomination.

THE R.I.B.A. NEW CLASS OF SUBSCRIBERS.

In the Supplemental Charter recently granted to the R.I.B.A., provision is made for the formation of a non-corporate class of Subscribers. The Council have the power to elect to this new class any persons who, not being professional architects, are interested in the activities of the Royal Institute and in architectural matters generally.

" Subscribers " will be entitled to use the Loan and Reference Library, to attend all General Meetings (except private Business Meetings) and to receive a copy of the Annual Report. They will not, however, be entitled to use in connection with their name or business any words or initials indicating that they are Members of or connnected with the Royal Institute.

The annual contribution payable by a " Subscriber " will be £1 1s. The first payment will become due within two months of election and subsequent payments on the first of January each year. Subject to the additional payment of 12s. per annum, Subscribers will also receive post free the R.I.B.A. Journal, which is published fortnightly during the Session (November to June) and monthly during the recess.

The Council cordially invite applications from ladies or gentlemen who desire to be thus associated with the work of the Royal Institute, and the necessary nomination form can be obtained on application to the undersigned.

Election of Members

30 NOVEMBER 1925.

The following applications for election have been received. Notice of any objection or other communication respecting the Candidates must be sent to the Secretary for submission to the Council prior to Monday, 2 November 1925.

AS FELLOWS (100).

ABERCROMBIE : PROFESSOR LESLIE PATRICK, M.A. Liverpool [*A.* 1915], Department of Civic Design, School of Architecture, University of Liverpool ; 18 Village Road, Oxton, Birkenhead.

BINNIE : MAJOR WILLIAM BRYCE, M.C. [*A.* 1920], Imperial War Graves Commission, Longuenesse, St. Omer (P. de C.), France.

DICKMAN : HENRY ALDERMAN, M.C. [*A.* 1910], 1 King's Walk, Nottingham ; Wood Lane, Gedling, Nottingham.

DOBIE : WILLIAM GLEN [*A.* 1892], The Temple, Dale Street, Liverpool ; Brarhead, Orton, Birkenhead.

HENNELL : SIDNEY THORN [*A.* 1910], 97 Jermyn Street, Piccadilly, W. ; 16 Earlsfield Road, Wandsworth, S.W.18.

HOBBS : FREDERICK BRICE [*A.* 1895], May Buildings, 51 North John Street, Liverpool ; " Tower Lea," Waterloo, Liverpool.

JACKSON : GORDON WALLET [*A.* 1925], 5 Yelverton Road, Bournemouth ; Bydand, Penrith Road, Boscombe, Bournemouth.

MCLEAN : ARCHIBALD JOHN [*A.* 1909], 3 Palace Place, Brighton ; 179 Ditchling Road, Brighton.

METCALFE : CECIL BROADBENT [*A.* 1909], County Offices, Jermyn Street, Sleaford, Lincs ; 68 Grantham Road, Sleaford.

POLE : THOMAS ALOYSIUS [*A.* 1895], 10 Gray's Inn Square, W.C.1 ; Hurlocks, Billericay, Essex.

SUTCLIFFE : FREDERICK [*A.* 1919], 21 Northumberland Avenue, W.C.2 ; 33 Cator Road, Sydenham, S.E.

TASKER : WILLIAM WATT, M.C. [*A.* 1909], The Moothall, Newcastle-on-Tyne ; 32 Larkspur Terrace, Newcastle-on-Tyne.

TURNER : HORACE GEORGE [*A.* 1910], c/o Messrs. Hemmings & Berkley, Hankow, China.

WOOD : ARTHUR JACKSON [*A.* 1914], 18 New Street, Leicester ; " Prestwold," Westfield Road, Leicester.

WOOLLATT : JOHN [*A.* 1910], Eldon Chambers, Wheeler Gate, Nottingham ; Newcastle Avenue, Beeston, Notts.

And the following Licentiates who are qualified under Section IV, Clause C (ii), of the Supplemental Charter of 1925 :—

ABBOTT : ERNEST HENRY, 6 Warwick Court, Gray's Inn, W.C.1 ; 41 Queen's Gate Gardens, South Kensington, W.

BAKES : JAMES HARPER, Calverley Chambers, Victoria Square, Leeds ; 12 The Grove, Idle, Bradford.

BIRAM : ERNEST FRANK STUART, 17 George Street, St. Helens, Lancs ; 1 Princes Gate East, Liverpool.

BOYD : JOHN WILLIAM, 9 Salisbury Gardens, Newcastle-on-Tyne.

COMPTON : CHARLES EDWARD, St. Hilary, 49 Llanthewy Road, Newport, Mon.

DAVIES : SAMUEL, 6 Alvanley Terrace, Frodsham, Cheshire.

FRENCH : SIDNEY, 40 Regent Street, Cambridge.

GARDNER : ALEXANDER, 134 Bath Street, Glasgow ; " Kingsbeck," 89 Eldon Street, Greenock.

GARRETT : THOMAS, 34 Ship Street, Brighton ; 54 Brunswick Square, Hove.

HEYWOOD : JAMES HERBERT, 1 St. Peter's Street, Oldham ; 73 Queen's Road, Oldham.

MORRIS : WILLIAM RICKARDS, 22 The Forbury, Reading ; " Gorphuysta," Northcourt Avenue, Reading.

NUNNS : WILLIAM RHODES, Estate Office, Saltaire ; 2 Albert Road, Saltaire.

PARR : THOMAS HENRY NOWELL, 42 Cranley Gardens, S..W7 ; " Beverley Oaks," Warren Road, Coombe Warren, Surrey.

RAFFLES : WINTER HARGREAVES, 12 Bloomsbury Square, W.C.1 ; 22 The Grove, Boltons, South Kensington, S.W.10.

SHARP : WALTER RICHARD, 40 South King Street, Manchester ; " Paxford," St. Andrews Road S., St. Anne's-on-Sea.

SIMPSON : GEORGE, 233 St. Vincent Street, Glasgow ; 6 Milner Road, Jordanhill, Glasgow.

TRIBE : ARTHUR WALTER, 33 Craven Street, Strand, W.C. ; Arundel House, Cheam, Surrey.

WEST : JOHN GEORGE TIMOTHY, The Knowl, Abingdon.

WILKINSON : ARTHUR GROSVENOR, Imperial War Graves Commission, St. Omer, France ; 19 Rue Carnot, St. Omer, France.

WINMILL : CHARLES CANNING, 2 Eliot Place, Blackheath, S.E.3.

And the following Licentiates who have passed the qualifying examination :—

ADAMS : WILLIAM HENRY, Town Hall, Highgate, N.6 ; 37 Chandos Avenue, Oakleigh Park, N.20.

ANDERSON : STANLEY PERFITT, 13 Durlston Road, Kingston-on-Thames.

BENTLEY : CLAYTON MOFFAT, 53 Church Street, Whitehaven.

BEVERIDGE : DAVID ALSTON, Prudential Buildings, 36 Dale Street, Liverpool ; 2 Manville Road, Wallasey, Cheshire.

BIRD : ERNEST, 11 Portland Street, Southampton ; 55 Lumsden Avenue, Southampton.

BLACKBOURN : CHARLES EDWIN, 34 Finsbury Square, E.C.2 ; 355 High Road, Tottenham, N.15.

BODDY : PERCY CHARLES, 19 Palace Street, Westminster, S.W.1; " Sorrento," Ruislip, Middlesex.

BRETT : CHARLES, 168A Albion Road, Stoke Newington, N.16.

BRETT : ERNEST JOHN, 72 West Boro', Wimborne Minster, Dorset ; Anglebay, Colehill, Wimborne.

BRIDGES : OSWALD ARTHUR, " Waratah," Richmond Avenue, Bognor, Sussex.

BROWNE : F. ANSTEAD, Architect to the County Agricultural and Small Holdings Committee of the Cheshire County Council ; Inglewood, Dee Hills Park, Chester.

BURGESS : JULIAN GULSON, Beaconsfield and 13 Gray's Inn Square, W.C. ; Netherlands, Beaconsfield.

BURNETT : ERNEST WHITFIELD, The Estate Office, Colwyn Bay, N. Wales ; " Toft Butt," Llannerch Road West, Colwyn Bay.

CAMERON : EDWIN PERCY, 16 and 17 Devonshire Square, Bishopsgate, E.C. ; 18 Eastwood Road, South Woodford, Essex.

CANNELL : ERNEST WILLIAM, 259 High Holborn, W.C. ; 39 Hetherfield Road, Streatham Hill, S.W.

CASTLE : SYDNEY ERNEST, 40 Albemarle Street, Piccadilly, W.1 ; Burntwood Lane, Wandsworth Common, S.W.17.

CHERRY : HAROLD GRIFFITH, 7 Buckingham Street, Adelphi, W.C.2 ; Digswell, Welwyn, Herts.

COTMAN : GRAHAME, Queen Street, Norwich ; Mill Hill, Strumpshaw, Norwich.

DAVIS : HAROLD STRATTON, M.C., 65 Northgate Street, Gloucester ; Home Cottage, Hardwicke, nr. Gloucester.

EVANS : ERNEST HOLLYER, 17 Bedford Square, W.C.1.

FAIRWEATHER : HUBERT MOORE, 12 Carteret Street, Queen Anne's Gate, S.W.1 ; 25 Beeches Avenue, Carshalton, Surrey.

FORBES : JAMES, 19 Grange Road, Middlesbrough ; Craigievar, Marton-in-Cleveland, Yorks.

HAIGH : BERTRAM HUGH PARKIN, Broadway Court, Westminster, S.W.1 ; " Woode Weye," Heronsgate, Chorley Wood, Herts.

HARPER : LEONARD EWEN, 191 Corporation Street, Birmingham ; " Briarwood," Blossomfield, Solihull, Birmingham.
HARRINGTON : LLEWELLYN HARRY, " Fourways," Croham Manor Road, South Croydon.
HIDER : ERNEST JAMES WEDLOCK, 11 Avenue Chambers, Southampton Row, W.C.1 ; Hillboro', The Mount, New Malden, Surrey.
HILL : JOHN JAMES, Emerson Chambers, Blackett Street, Newcastle-on-Tyne ; " Meadowfield," Runnymede Road, Ponteland, nr. Newcastle-on-Tyne.
HORSBURGH : WILLIAM PETER, F.S.I., D16 Exchange Buildings, Liverpool ; 17 Victoria Road, Waterloo, nr. Liverpool.
JOHNS : EDWIN THOMAS, 8 Lower Brook Street, Ipswich.
JONES : ALBERT HENRY, Victoria Station House, S.W. ; Thurmo, West Hill, Sanderstead, Surrey.
JONES : FRANCIS EDWARD, 8 Gloucester Mansions, Cambridge Circus, W.C.2 ; Beechboro', 189A Park Road, Kingston Hill, Surrey.
LYONS : HENRY JOHN, 14 South Frederick Street, Dublin ; The Gables, Seafield Road, Clontarf, Dublin.
MCINTOSH : DAVID GORDON, 60 Castle Street, Liverpool ; Stivelooms, Heswall-on-Dee, Cheshire.
MACINTOSH : HUGH, 1 Imperial Buildings, East Croydon, Surrey ; Braeside, Sandy Lane, Wallington, Surrey.
M'LACHLAN : JAMES, 4 Melville Crescent, Edinburgh ; 125 Warrender Park Road, Edinburgh.
MCLAUCHLAN : STEWART, Royal Liver Building, Liverpool ; " Nethway," Rock Park, Rock Ferry.
MATHESON : DONALD, Tulloch Street, Dingwall, Ross-shire ; " The Birches," Craig Road, Dingwall.
MOODEY : ERNEST EDWARD, 109 High Street, Broadstairs ; St. Vincent, Luton Avenue, Broadstairs.
MORRISON : JAMES INCH, 24 Duke Street, Edinburgh.
MURRAY : JOHN, 56 Chatsworth Road, Luton, Beds.
NEWBOLD : HARRY BRYANT, Stafford House, Norfolk Street, Strand, W.C.2 ; Chantry Cottage, Hatfield, Herts.
NURSE : HARRY, M.C., Borough Engineer and Surveyor's Office, Town Hall, Leigh, Lancs ; " Newlands," Great Sankey, nr. Warrington.
PEARCE : JOSEPH PEARCE, F.R.Hist.S., Royal Insurance Buildings, Liverpool ; 9 Beach Lawn, Waterloo, Liverpool.
PEMBERTON : GUY, 120 Edmund Street, Birmingham, and 20A Henley Street, Stratford-on-Avon ; Pyeford, St. Gregory's Road, Stratford-on-Avon.
POMEROY : ERNEST JAMES, 21 Acresfield, Bolton ; " Fairhaven," Harpers Lane, Smithills, Bolton.
POOLE : WILLIAM HAROLD, 33 Earl Street, Maidstone ; 7 London Road, Maidstone.
POULTER : HARRY REGINALD, 2 London Road, Camberley, and 27 Buckingham Gate, S.W.1 ; Collingwood Place, Camberley, Surrey.
RAVENSCROFT : FREDERICK ERNEST BRIANT, 16 Friar Street, Reading ; " Thornhill," The Mount, Caversham.
RIMMINGTON : FRANK, Harrington Chambers, 26 North John Street, Liverpool ; " Wynthorpe," Greenhill Avenue, Mossley Hill, Liverpool.
ROWLAND : HAROLD EVANS, 17 Craven Street, W.C. ; The Gatehouse, Purley, Surrey.
RUTHERFORD : JAMES HERVEY, 13 Lendal, York ; 4 Clifton Dale, York.
SCAIFE : WILLIAM NIXON, 26 Northumberland Street, Newcastle-on-Tyne ; 38 South Parade, Whitley Bay.
SHANN : FRANK HALLIWELL, 71 Lombard Street, E.C. ; 33 Belgrave Road, S.W.
SHERVEY : ALBERT EDWARD, Town Hall, Bournemouth ; 18 Stafford Road, Bournemouth.
SIMMONS : CHARLES EVELYN, Palace Chambers, Bridge Street, S.W.1 ; Wyldes Close, North End, Hampstead, N.W.11.
STODDART : DONALD MCKAY, 266 St. Vincent Street, Glasgow ; 41 Kelvinside Gardens, N., Glasgow.
SUDBURY : HARRY TATHAM, Rutland Chambers, Ilkeston ; Wayside, Longfield Lane, Ilkeston.
THORPE : FRED, Union Bank Chambers, Church Lane, Oldham ; " The Haven," Grasscroft, Greenfield, Yorks.
THRAVES : ALFRED JOHN, 11 High Street, Nottingham ; " Wolds Cot," Plumtree, Notts.
VAUX : FRED, Danesmoor Chambers, 29 Quay Road, Bridlington ; " Methley," Station Road, Filey, E. Yorks.
WAGSTAFF : CLARENCE BARNARD, 57 Salter Gate, Chesterfield.
WEBBER : FRANCIS SIDNEY, 30 Lee Park, Blackheath, S.E.3.
WEBSTER : WILLIAM EDMUND NORMAN, 1A New Road, Spalding, Lincs : " Normacott," Pennygate, Spalding.
WEIGHTMAN : FREDERICK NORMAN, M.A., 2 Collingwood Street, Newcastle-on-Tyne ; 65 Manor House Road, Newcastle-on-Tyne.
WEST : ARCHIBALD BULLER, The Knowl, Abingdon.

AS ASSOCIATES (62).

AIMER : KENNETH WALTER [Special], 423 N.Z. Insurance Buildings, Auckland, New Zealand.
ALLCORN : WILLIAM JOHN [Final], " The Pinnacles," Shipbourne, nr. Tonbridge, Kent.
ANDREWS : CLAUDE EVRARD ALDINGTON, B.Sc. [Special], 29 Greenhill Road, Moseley, Birmingham.
ASTBURY : FRANK NICHOLAS, B.Arch. Liverpool [Passed five years' course at Liverpool University School of Architecture. Exempted from Final Examination after passing Examination in Professional Practice], Waverley House, Wolverhampton Road, Stafford.
BAILY : BRUCE WILLIAM SEYMOUR STILES [Special], c/o Mrs. James, St. Dial's House, Cwmbran, Mon.
CAMERON : ARTHUR EDWIN [Passed five years' course at Architectural Association. Exempted from Final Examination after passing Examination in Professional Practice], 18 Eastwood Road, South Woodford, E.18.
CHANNON : GUY DUNSTAN [Special], Red Walls, Malton, Yorkshire.
CHATTERLEY : ARTHUR OLIVER, B.Arch. Liverpool [Final], 73 Oriel Road, Bootle, Liverpool.
CLARK : JAMES CHARLES [Passed six years' course at Robert Gordon's Colleges, Aberdeen. Exempted from Final Examination after passing Examination in Professional Practice], 258 Great Western Road, Aberdeen.
COLEMAN : SAMUEL ERNEST [Special], Ryde Road, Gordon, New South Wales.
CONOLLY : HAROLD [Final], Aysgarth, Walton, Wakefield, Yorks.
COOPER : JOHN BRIAN [Final], 68 Torrington Square, W.C.1.
CROSSLEY : FREDERICK HAMER [Passed five years' course at Liverpool University School of Architecture. Exempted from Final Examination after passing Examination in Professional Practice], 15 Arnside Road, Wallasey, Cheshire.
CUTBUSH : PATRICK [Passed five years' course at Architectural Association. Exempted from Final Examination after passing Examination in Professional Practice], " Kerri," Arkley, Barnet, Herts.
DEAS : THOMAS VICTOR [Passed five years' course at Glasgow School of Architecture. Exempted from Final Examination after passing Examination in Professional Practice], Vicarsford, Airdrie, Lanarkshire.
FAHY : CONOR PATRICK [Special], 33 Leppoc Road, Clapham, S.W.4.
FARQUHAR : LUDOVIC GORDON, F.S.A.Scot. [Passed five years' course at Glasgow School of Architecture. Exempted from Final Examination after passing Examination in Professional Practice], St. Margaret's, Bridge of Weir, Renfrewshire.
FORSTER : EDWARD, B.A. [Final], 1 Leaside Avenue, Muswell Hill, N.10.

GALE : DERMOT WILLIAM FAUNTLEROY [Special War Examination], "Minilya," Walsh Street, South Yarra, Melbourne, Victoria.

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Competitions

PORTSTEWART GOLF CLUB COMPETITION.

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INTERNATIONAL COMPETITION.

The Fédération Internationale du Bâtiment et des Travaux Publics are organising an International Competition with a view to promoting and facilitating the construction of houses for the middle classes and intellectual workers. Prizes to the value of 500 dollars, 300 dollars and 200 dollars are being offered by Mr. Willard Reed Messenger, engineer, of New York, for a memorandum, either in English or French, not exceeding 5,000 words, accompanied by sketches. Particulars of the competition have been deposited with the Secretary R.I.B.A. and can be obtained on application to him at No. 9 Conduit Street, London, W.

RECONSTRUCTION OF THE MOSQUE OF AMROU COMPETITION, CAIRO.

Members of the Royal Institute who are considering taking part in the above competition are strongly recommended to consult the Secretary R.I.B.A. before deciding to compete.

PROPOSED NEW TECHNICAL SCHOOL AT COOKSTOWN.

Members of the Royal Institute of British Architects must not take part in the above competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

LEAGUE OF NATIONS.

COMPETITION FOR THE SELECTION OF A PLAN WITH A VIEW TO THE CONSTRUCTION OF A CONFERENCE HALL FOR THE LEAGUE OF NATIONS AT GENEVA.

The League of Nations will shortly hold a competition for the selection of a plan with a view to the construction of a Conference Hall at Geneva. The competition will be open to architects who are nationals of States Members of the League of Nations.

An International Jury consisting of well-known architects will examine the plans submitted and decide their order of merit.

A sum of 100,000 Swiss francs will be placed at the disposal of the Jury to be divided among the architects submitting the best plans.

A programme of the competition when ready will be despatched from Geneva, and Governments and competitors will receive their copies at the same time. Copies for distant countries will be despatched first.

The British Government will receive a certain number of free copies. These will be deposited at the Royal Institute of British Architects, and application should be made to the Secretary, R.I.B.A., 9, Conduit Street, W.1, by intending competitors.

Single copies can be procured direct from The Secretary-General of the League of Nations at Geneva, for the sum of 20 Swiss francs, payable in advance, but will not be forwarded until after the Government copies have been despatched.

On the nomination of the President of the Royal Institute, Sir John Burnet, A.R.A., has been appointed as the British representative on the Jury of assessors.

THE NEW INSTITUTE FOR THE BLIND, BUENOS AIRES, ARGENTINE REPUBLIC.

An International Competition has been promoted for the Argentine Institution for the Blind, Buenos Aires, Argentine Republic.

A small number of copies of the Conditions have been deposited in the R.I.B.A. Library for the information of British Architects who may desire to compete.

A booklet containing the full text of the conditions with other information (translated from the Spanish) and a plan of the ground on which the Institution is to be erected is available for inspection at the Department of Overseas Trade (Room 42), 35 Old Queen Street, London, S.W.1.

PROPOSED NEW COLLEGE BUILDINGS, LIVERPOOL COLLEGE.

Proposed New College Buildings to be erected on a site in Queen's Drive, Mossley Hill, Liverpool. Assessor, Sir Giles Gilbert Scott, R.A. Premiums £500, £300 and £200 are offered. Last day for questions, 30 September 1925. Conditions may be obtained by depositing £2 2s. Designs to be sent in not later than 1 January, 1926.

AUSTRALIAN WAR MEMORIAL—CANBERRA.

Competitive designs are invited for the Australian War Memorial at Canberra.

The competition is open to architects of Australian birth, wherever located, and in order that competitors who are abroad may be placed on the same footing as those in Australia, the conditions governing the competition will not be available in Australia until 15 August, at which date they will be available at the office of the High Commissioner, Australia House, Strand.

To ensure that the same working time is allowed to all competitors, the competition will close simultaneously in Australia and London on 31 March, 1926, up to noon, on which date designs from architects in Europe will be received at the office of the High Commissioner in London.

Intending competitors should communicate with the Official Secretary to the Commonwealth of Australia, Australia House, Strand, W.C.2.

COMPETITION FOR THE ENLARGEMENT OF CARNEGIE HALL, DINGWALL, AND THE FLEETWOOD HOSPITAL COMPETITION.

Members of the Royal Institute of British Architects must not take part in the above competitions because the conditions are not in accordance with the published regulations of the Royal Institute for Architectural Competitions.

COVENTRY AND WARWICKSHIRE HOSPITAL. PROPOSED NEW WARD BLOCK.

The promoters of the above competition having decided to revise the conditions in accordance with the R.I.B.A. Regulations, the President has appointed Mr. C. E. Bateman, F.R.I.B.A. as assessor.

PROPOSED PARISH HALL, BRAUNTON.

Members of the Royal Institute of British Architects must not take part in the above competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

TOPSHAM PUBLIC HALL COMPETITION.

Members of the Royal Institute of British Architects must not take part in the above competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

The promoters of the above competition have decided to amend the conditions in accordance with the R.I.B.A. regulations and have asked the President to appoint an Assessor.

Members' Column

CHANGE OF ADDRESS.

Mr. H. C. Hughes [*A.*] has moved his office to No. 1 Tunwell's Court, Trumpington Street, Cambridge (opposite the Fitzwilliam Museum). Telephone as before, Cambridge 184.

Mr. T. Lawrence Dale, F.R.I.B.A., has changed his London address to 22 Craven Street, Strand, W.C. Telephone Regent 7178.

Messrs. Bethell, Swannell & Durnford, 1 Broad Street Buildings, Liverpool Street, E.C.2, have transferred their offices to Adam House, 16A John Street, Adelphi, W.C.2. The new telephone number is Regent 3183.

Messrs. Rough & Hooper, are removing their offices from 509 Smiths Buildings, Albert Street, Auckland, N.Z., to A.M.P. Buildings, Victoria Street, Auckland.

DISSOLUTION OF PARTNERSHIP.

The partnership subsisting between George Arthur Boswell, F.R.I.B.A., and Leonard Rome Guthrie, F.R.I.B.A., at 37 Bruton Street, London, W., has been dissolved by mutual consent as from 31 August 1925.

A dissolution of partnership as and from 31 March 1925, has been mutually agreed between Mr. A. Archer-Betham, F.R.I.B.A., and Mr. F. W. Rees, Lic. R.I.B.A., of 44 Park Lane, Croydon. Mr. Rees will continue to carry on business at the above address under his own name. Mr. Archer-Betham has been appointed architect to the Government of Sierra Leone, West Africa.

MESSRS. WIMPERIS, SIMPSON & GUTHRIE

Messrs. Edmund Wimperis & Simpson, FF.R.I.B.A., architects, of 61 South Molton Street, W.1, and Mr. L. Rome Guthrie, F.R.I.B.A., architect, of 37 Bruton Street, W.1, have entered into partnership and will practise under the name of Wimperis, Simpson & Guthrie, at 61, South Molton Street.

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A.B.S. SCHEME OF PROFESSIONAL INSURANCE.

Insurance to-day is a very complicated business and too much care cannot be exercised in the choice of an insurance company and of a policy. If, however, architects consult the Insurance Committee of the Architects' Benevolent Society, they are sure of obtaining competent guidance in all insurance matters. Especially favourable terms are secured by the Society, and every insurance negotiated through its agency results in a direct contribution to the Benevolent Fund. Enquiries should be addressed to the Secretary, A.B.S., 9 Conduit Street, W.

BRITISH ARCHITECTS' CONFERENCE AT OXFORD.

Members who took part in the British Architects' Conference at Oxford last year may be interested to know that an illustrated history of the Castle Crypt and Mound has now been prepared and the booklet can be obtained, price one shilling, on application to the Governor, H.M. Prison, Oxford.

R.I.B.A. JOURNAL.

Dates of Publication.—1925: 7th, 11th November; 5th, 19th December. 1926: 9th, 23rd January; 6th, 20th February; 6th, 20th March; 10th, 24th April; 8th, 22nd May; 12th, 26th June; 17th July; 14th August; 18th September; 16th October.

Members sending remittances by postal order for subscriptions or Institute publications are warned of the necessity of complying with Post Office Regulations with regard to this method of payment. Postal orders should be made payable to the Secretary R.I.B.A., and crossed.

VOL. XXXII—Third Series No. 20. 17 OCTOBER, 1925.

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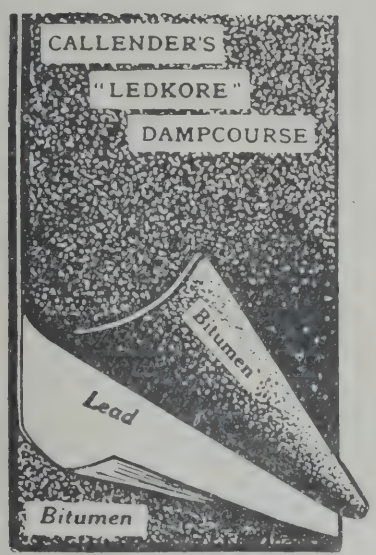

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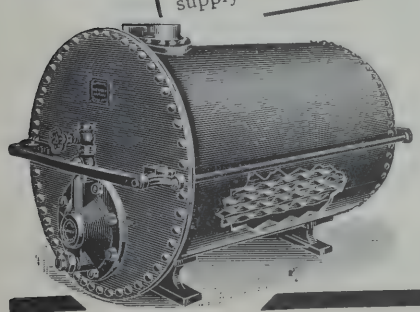

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D.W

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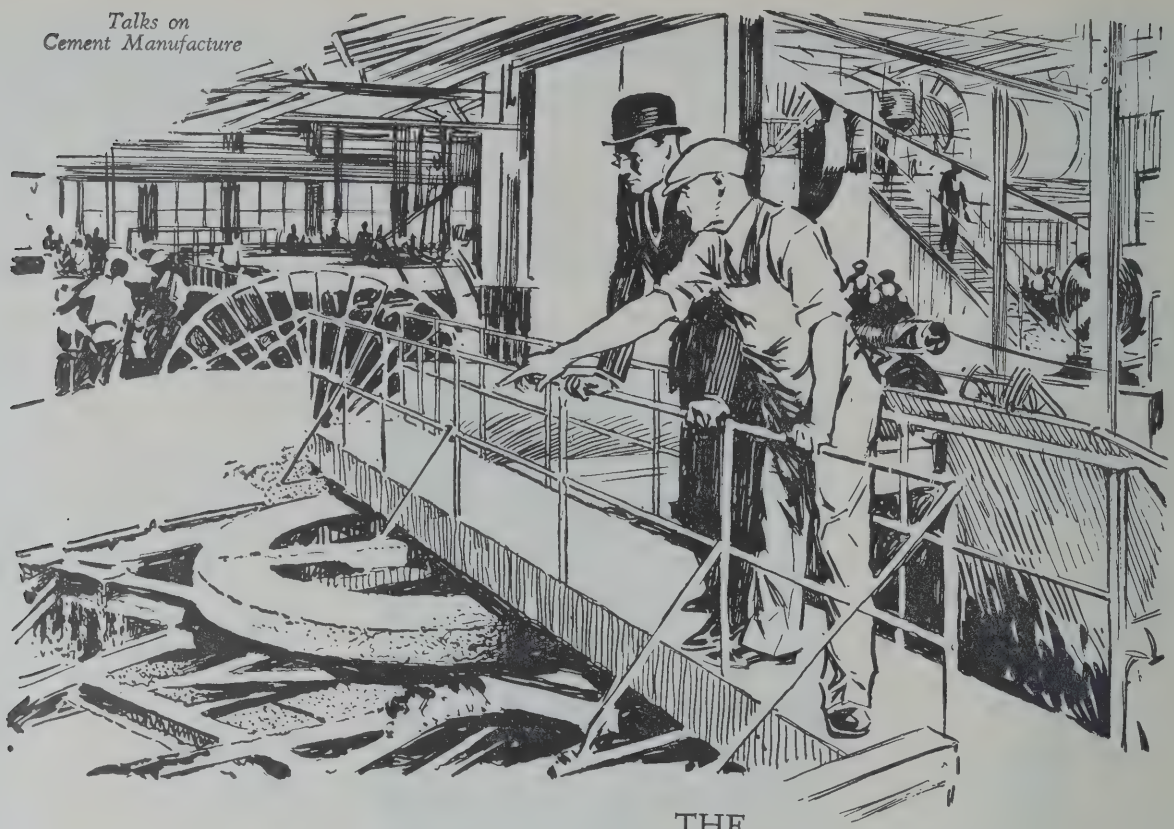

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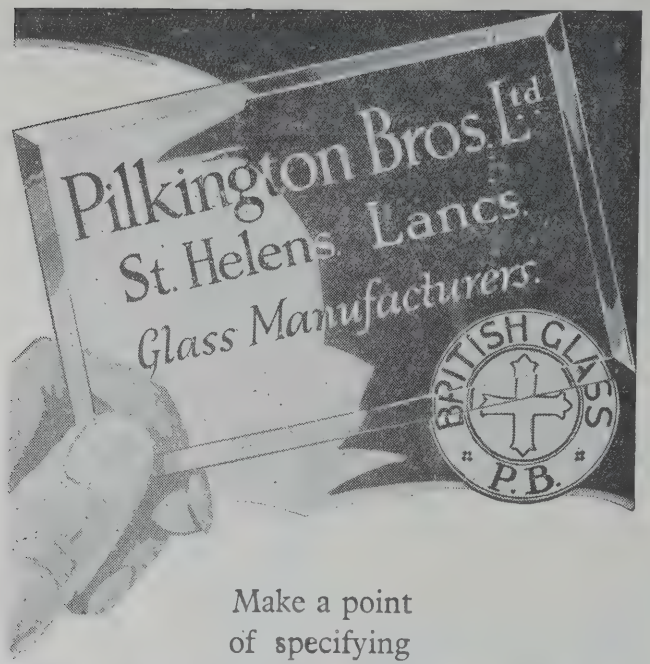

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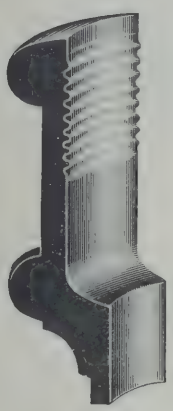
THE PIPES OF "PAM"

CONCERNING RAIN WATER PIPES.



Who has not experienced the annoyance and expense resulting from defective rain water pipes.

The defect frequently takes the form of a crack at the back of the pipe, which is not seen and the first intimation of the mischief is a damp patch inside a room or rooms after the wall is soaked and the decorations ruined.

The thickness of an ordinary rain water pipe is only about $\frac{1}{8}$in. and is very fragile. The body of the pipe when fixed is only about $\frac{1}{2}$in. from the wall, is difficult of access for painting and the back is usually missed by the brush.

"Pam" pipes are $\frac{3}{16}$in. thick and will last a lifetime. The body of the pipe stands about 1in. clear of the wall and can easily be painted all round.

Rain water pipes cannot be properly jointed because the jointing space does not exceed $\frac{1}{8}$in. and is frequently less, further, the socket is too weak to permit of proper caulking.

In "Pam" patent corrugated socket pipes the jointing space is $\frac{1}{4}$in. and can either be run with lead or caulked with oil cement and gaskin when used for rain water.

When a rain water pipe becomes choked near the foot it leaks at the first socket and soaks the wall. With a jointed "Pam" pipe the water can rise to a greater height and probably automatically force an obstruction and clear the pipe.

Usually rain water pipes are $\frac{1}{8}$in. to $\frac{3}{16}$in. smaller than their reputed diameter. "Pam" pipes are all full bore, consequently smaller pipes may be employed.

A 3in. "Pam" pipe fixed vertically will carry off an enormous quantity of water, a much greater quantity than any 4in. open top gully trap can deal with, indeed the full bore of a 2½in. "Pam" pipe will flood any such gully. This points to the fact that rain water pipes are in most cases fixed larger than necessary. Obviously the wise course is to reduce the number and size of down pipes and expend the money thus saved to obtain quality and permanence by using "PAM" pipes.

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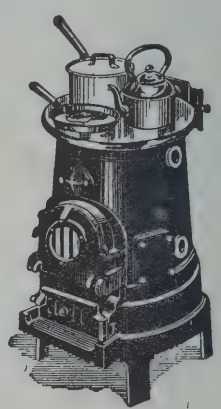

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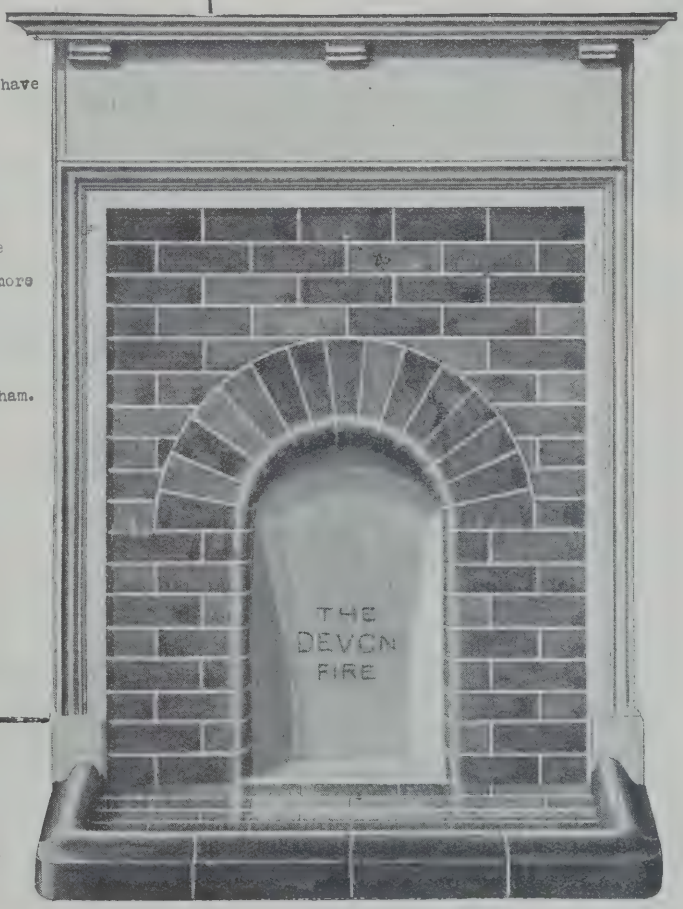

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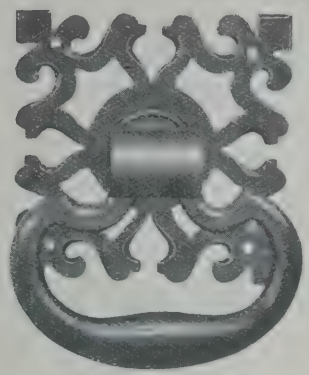

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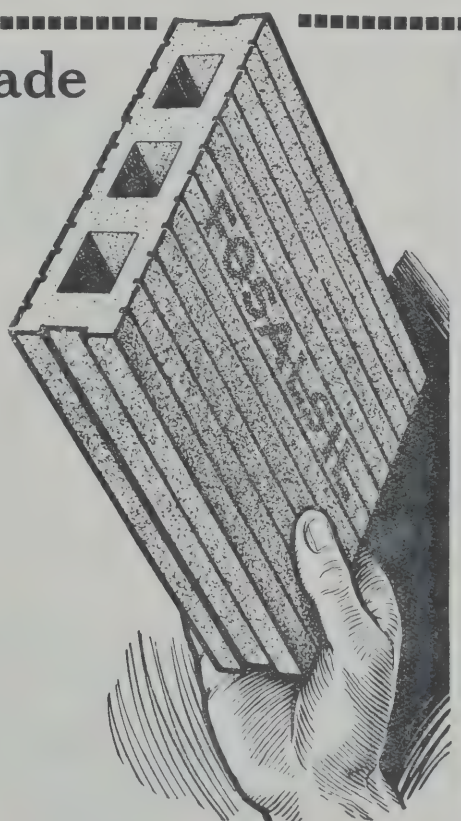

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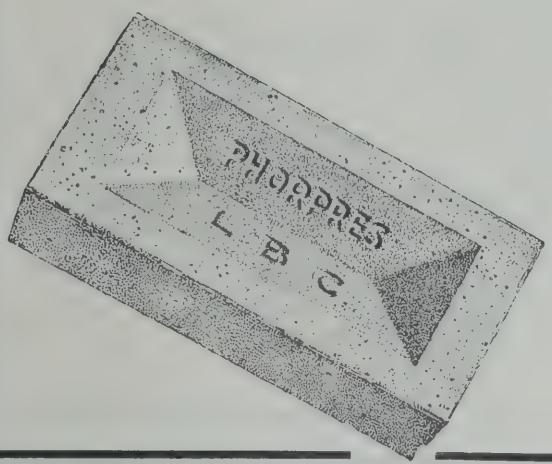

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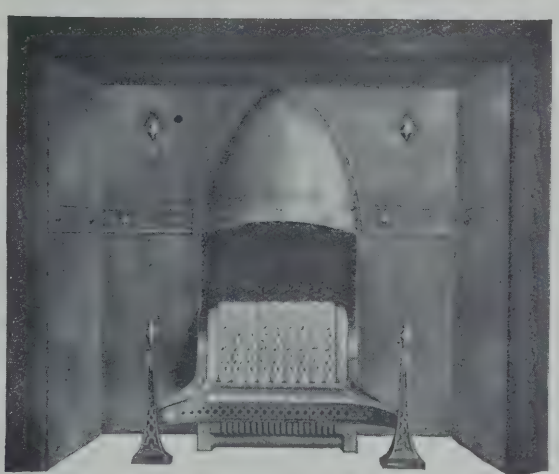

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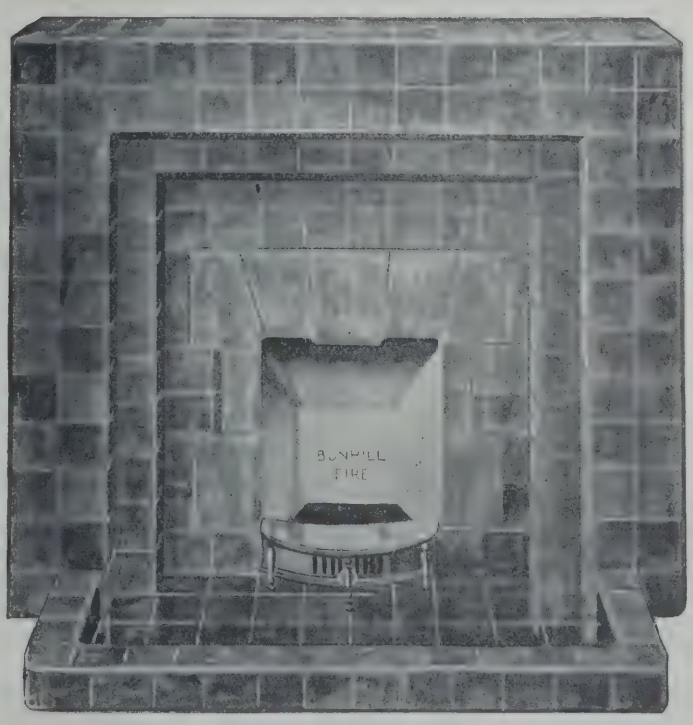

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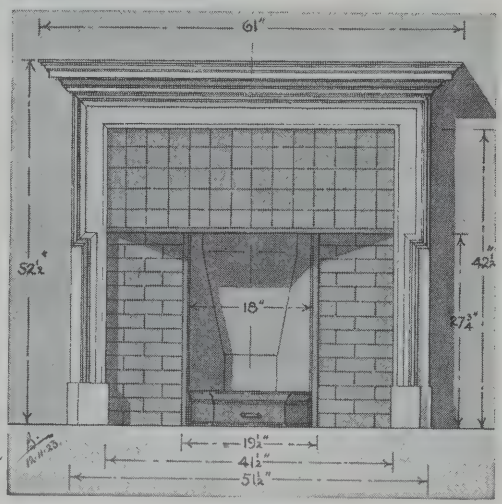

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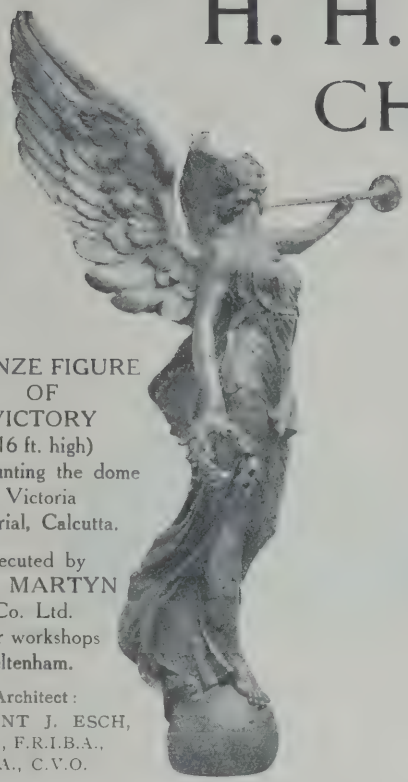

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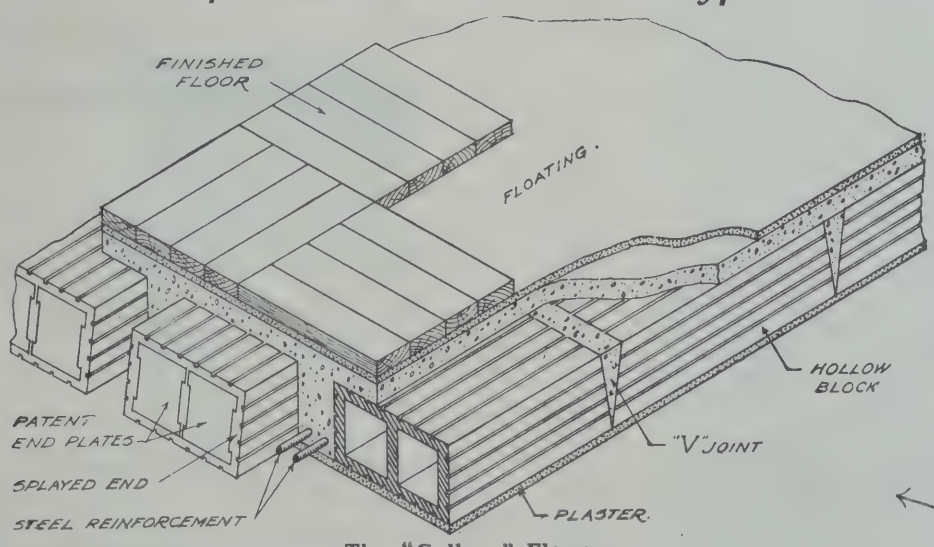

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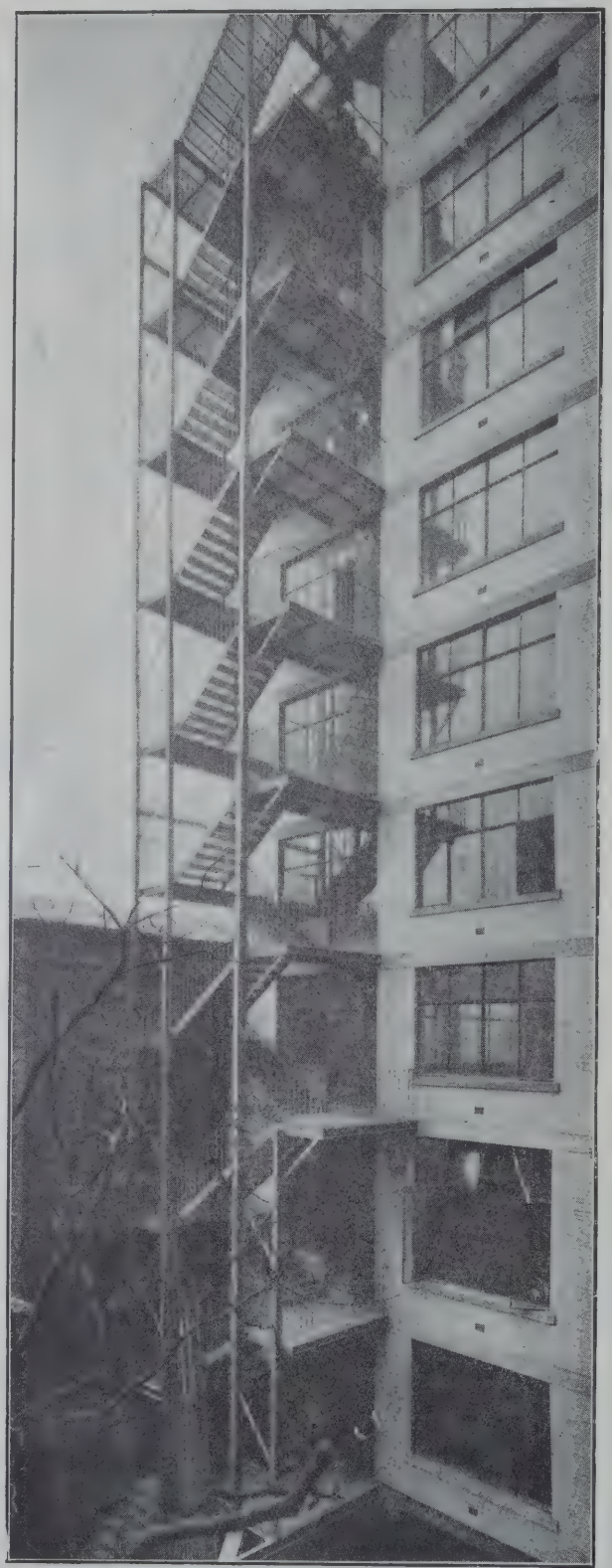

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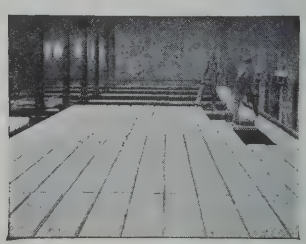

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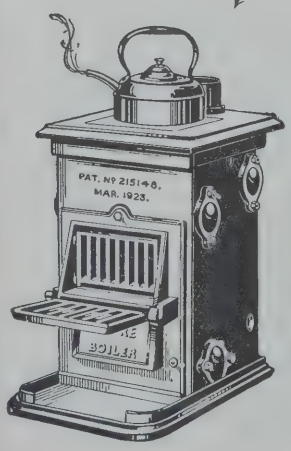

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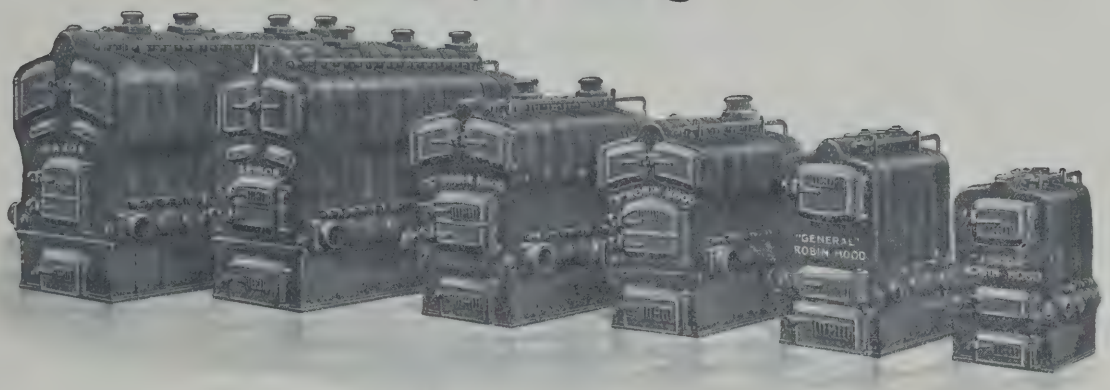

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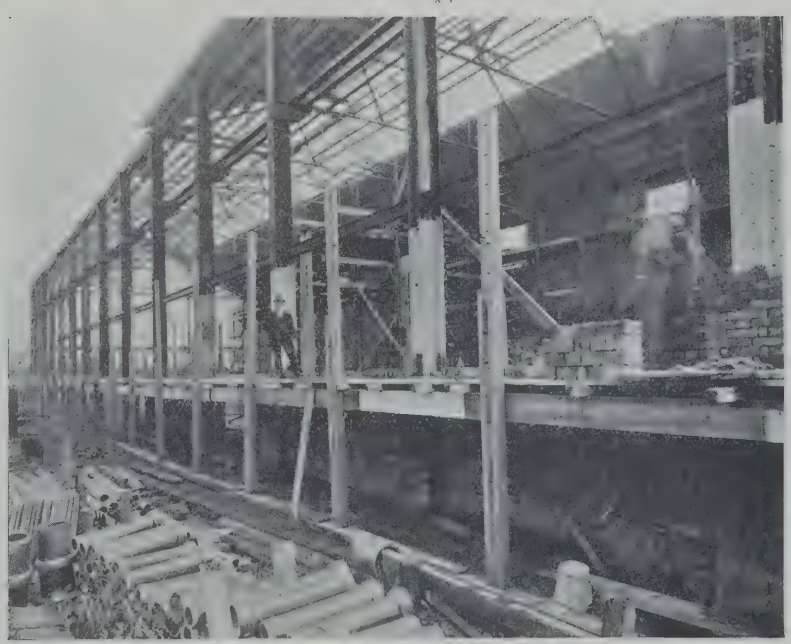

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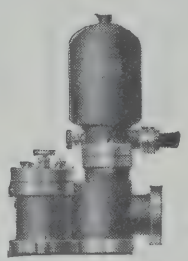

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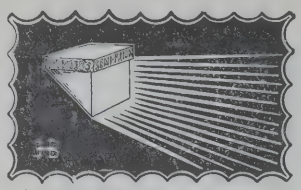

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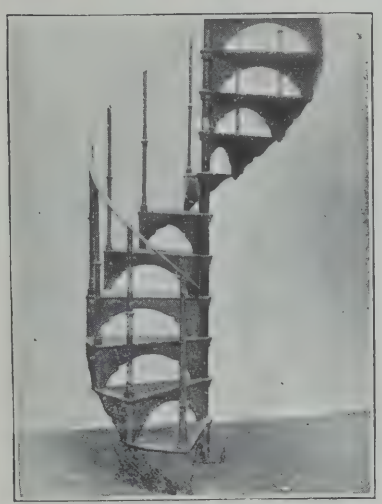

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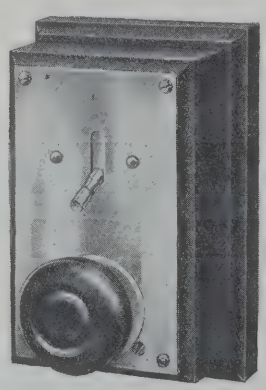

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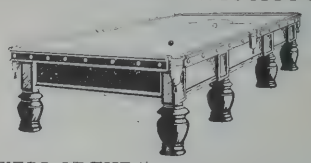

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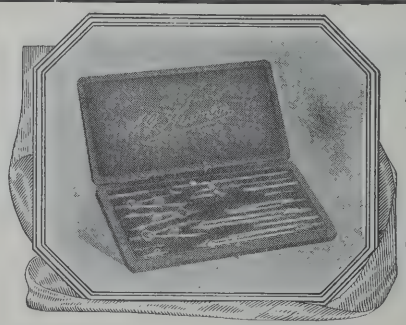

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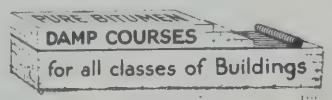

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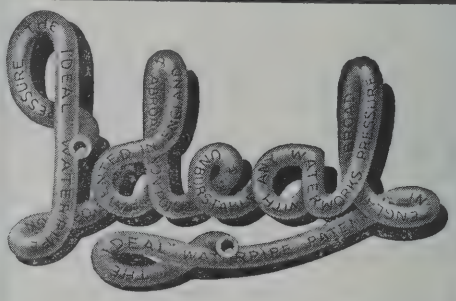

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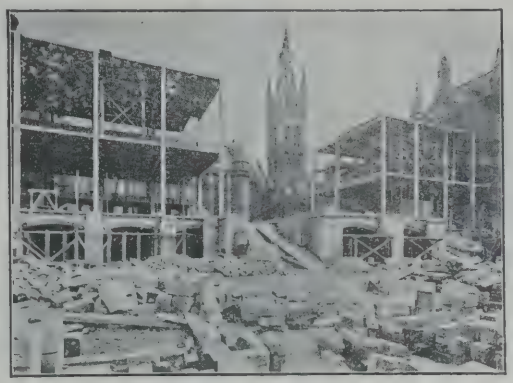

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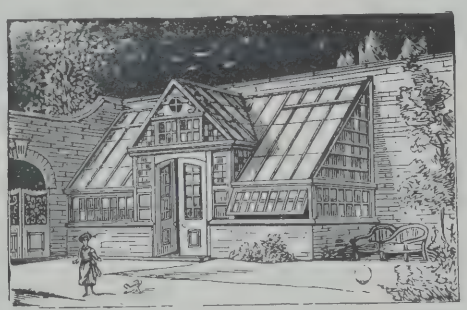

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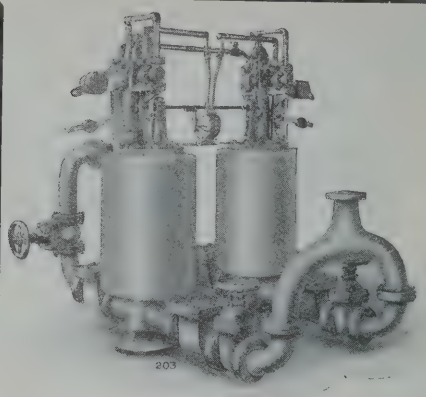

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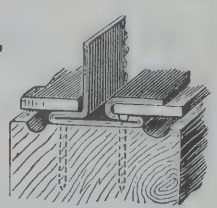

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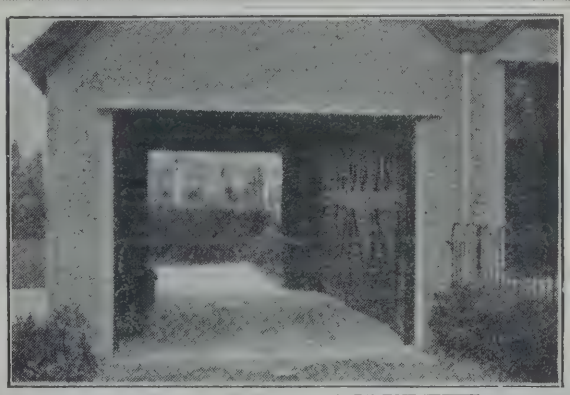

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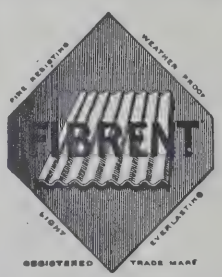

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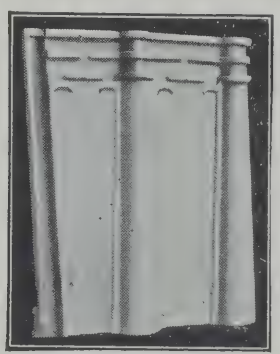

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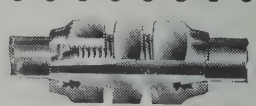

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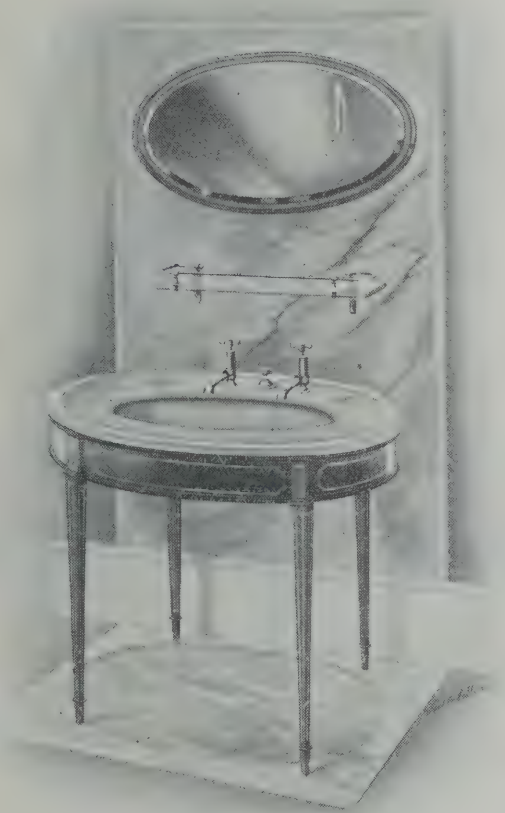

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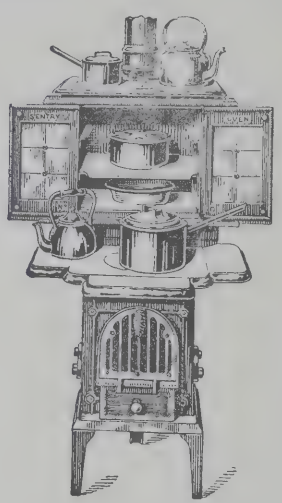

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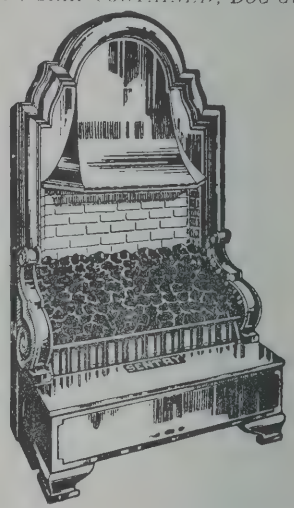

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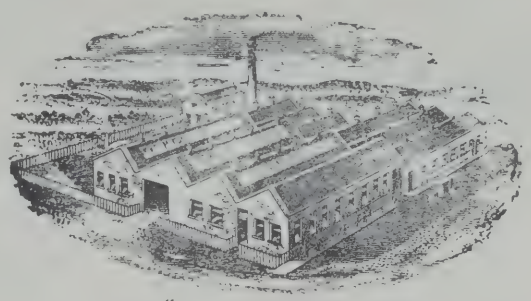

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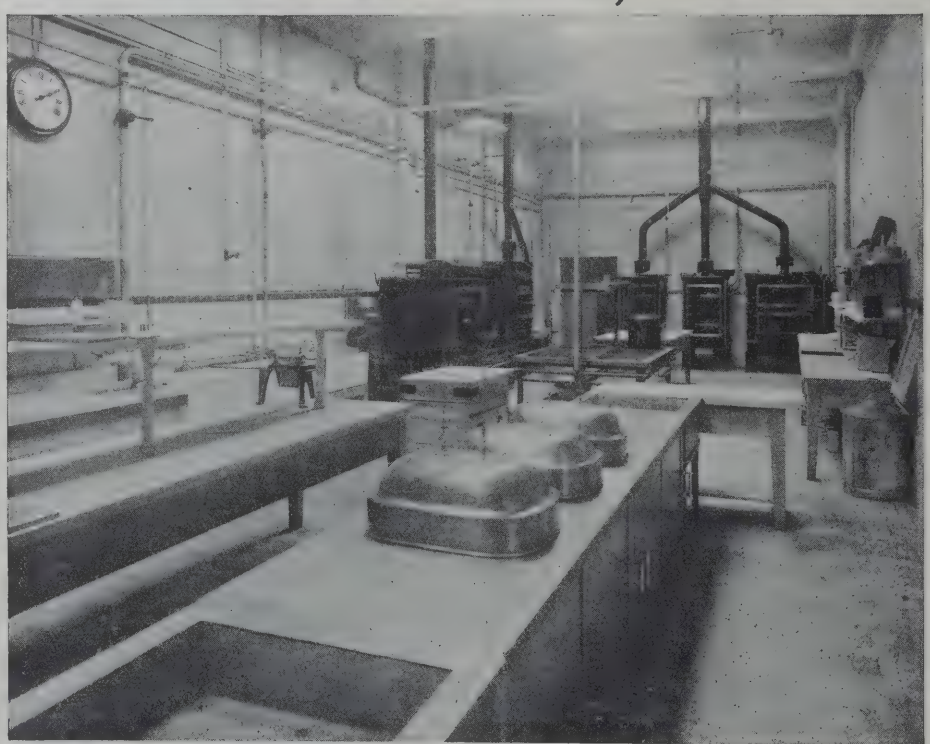

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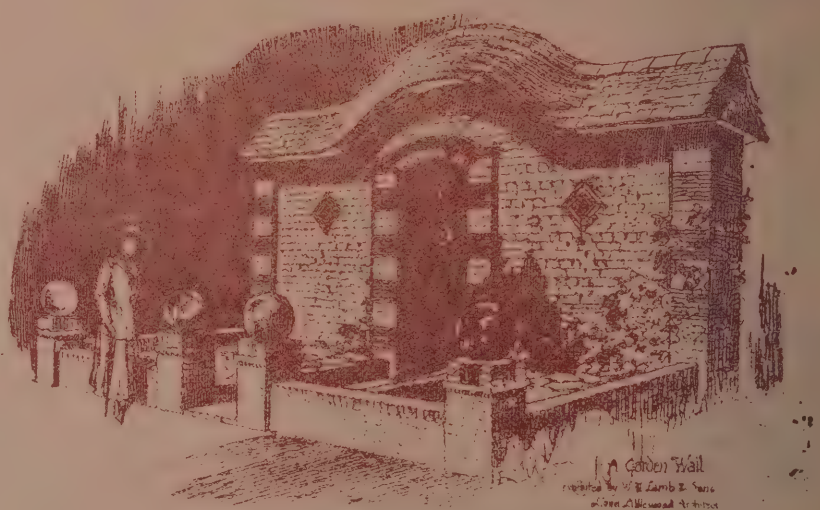

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